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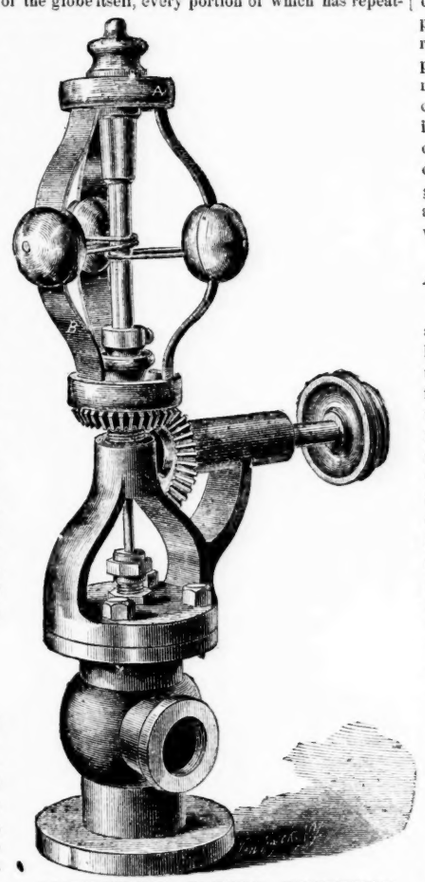
IMPROVED SPRING GOVERNOR.

Our readers will doubtless have observed, that to many of the Portable Engines recently illustrated and described in the JOURNAL OF MINING, was attached Pickering's Spring Governor. Some of them desiring to know more of it, we furnish on this page an engraving of this valuable apparatus. We understand, from the manufacturers--Messrs. Pickering and Davis, 144 Greene street, New York--that the object of this invention is to obtain the requisite centripetal force and stiffness without making the springs too heavy, and consists in the peculiar construction of the spring, and also in the shape of the curve given it, by the manner in which the ends and middle portion are secured, so as to keep those parts, at all times, parallel with the centre of motion. By this arrangement they can use steel so thin, that all liability to break, or tendency to "set," or lose its elasticity, is dispensed with; while, by using two or more strips together, the required centripetal force is obtained. The peculiar curve attained by this arrangement is called a double cyma, by the use of which, two or more strips, firmly secured together, will work freely without any tendency to buckle, or interfere with each other's action. By referring to the cut, it will be seen that the ends of the springs are secured to flanges, the lower of which, resting on steel washers, and having a collar to prevent its rising, is capable of only a rotary motion, while the upper one, being at liberty to move lengthwise as well as to rotate, receives its rotary motion from the lower one, through the springs, and communicates any lateral motion, due to the varying centrifugal force, immediately to the balanced valve to which the Governor is firmly secured by the bracket, a part of which forms a long bearing for the horizontal spindle, which communicates motion from the power to the Governor through the miter gearing. The simplicity, durability, economy and great sensitiveness of this Governor is proven by the fact that it is used by nearly all our New York engine builders.

The Earth's Crust Incessantly Changing.

To the casual observer, the hills and valleys that surround him appear unchanged and unchangeable. The plains and battle-fields mentioned in ancient history, the sites of cities and harbors, the courses of rivers and the contour of mountains, are much the same as when described one thousand, two thousand, or even four thousand years ago. But to him who looks a little more narrowly, the case is altogether different. The stream in the valley has cut for itself a deeper channel, and has repeatedly shifted its course—eating away the banks on one side, and laying down spits of new ground on the other. The cliffs in the hills are more weather-worn and round, and a larger mound of rock debris has accumulated at their bases: the lakes of the old historic plain, are partly converted into marshes, and the marshes into meadow land; the site of the old city on the sea-cliff has been partly wasted away by the encroaching waves; and the ancient harbor, once at the river mouth, is now a goodly inland, and separated from the sea by a flat alluvial delta. The Nilotic plain is not precisely the same as when described by Herodotus; the sunderbuds, or mud islands of the Ganges, have been largely augmented during the last two hundred years; and many areas that were laid down in the charts of our earlier traders as mud flats, now form fertile portions of the great Chinese plain. Vesuvius has repeatedly changed its aspects since Herculaneum and Pompeii were buried beneath its ejections; and there is scarcely an active volcano that has not materially added to its bulk, since the commencement of the current century. Such changes are incessant, and, though individually they may seem insignificant, yet, when viewed in the aggregate, and continued from century to century, they assume a magnitude commensurate with the crust of the globe itself, every portion of which has repeatedly suffered degradation and renovation, been repeatedly spread beneath the waters as sediment, and as repeatedly reconstructed into newer strata, and upheaved into dry land. Imperceptibly as the rains and frosts may wear away the mountain cliff, slowly as the river may deepen its channel, gradually as the delta may advance upon the estuary, and little by little as the volcano may pile up its scoriæ and lava, yet, after the lapse of ages, the mountain will be worn down, the river channel will be eroded into a valley, the estuary converted into an alluvial plain, and the volcano rear its cold and silent dome into the higher atmosphere. All that is necessary is time, and this is an element to which we can see no limit in the future, any more than we can discover a beginning to it in the past.—*Page's Geology for General Readers.*



PICKERING'S SPRING GOVERNOR.

Improved Ore-dressing Machinery.

Mr. John Hunt, of Porthleven, England, has invented a new ore-dressing machine, working on the principle that the varying specific gravity of different minerals, will cause them, when raised in water, and held for a short time in suspension therein, to settle down separately according to their respective weights. His machine, by a sudden pressure, causes water to pass up through a perforated table, on which ore—say ore containing lead, copper, and refuse—is placed. The pressure of the water raises the ore, and as it is carried by the water from the feeding to the discharging part of the machine, the lead sinks in a compartment nearest the feeder, the copper is carried into the next compartment, and so on. It is said that the machine is applicable not only to the treatment of ordinary ores, but also alluvial gold or crushed quartz; and so delicate is the action that it will not only save fine gold, but precious stones, such as diamonds, sapphires and rubies, which are frequently mingled with alluvial gold.

A Cheap Furnace for Chemical Experiments.

A correspondent who is an amateur chemist, sends a drawing and description of a cheap furnace, which, he says, he has used successfully for two years. He takes a piece of eight inch stove funnel, twelve or fourteen inches high, and furnished with a cap at the top, which can be removed at pleasure. At the bottom a small hole is cut in the side to receive the pipe from a blower, and the whole funnel is lined inside with pipe clay mixed with sand. Three inches from the bottom the lining is increased in thickness and receives some bits of wire, which form a grate. The blower is eight inches diameter and three wide, having four fans made of sheet iron, tin, or even pasteboard, as is also its case, and is driven by a small pulley belting from a larger one designed to be turned by hand. The whole arrangement can be secured to a board, that portion under the furnace being protected by sheet-iron. In such a furnace our correspondent says he has melted cast iron and maganese in a few minutes. He prefers coke to coal, as giving a more intense heat. His suggestions appear to be valuable to amateurs who do not wish to incur the expense of a complete apparatus.—*Scientific American.*

Agassiz' Geological Discoveries in Brazil.

The Anglo Brazilian *Times* sketches the lectures of Professor Agassiz in Rio Janeiro—a summary of which runs thus:

"The mass of the Amazonic deposits is found above the level of the sea, though in a plane of little elevation. The lowest beds are seen everywhere, from the Huallaga to Marajo. They were formed with a slight inclination from West to East. Always and everywhere they present a triple character. At the bottom are marines, clays so fine, so triturated that the grains are almost indistinguishable, and forming an absolutely homogeneous and uniform mass. Beneath these appear a mixture of clay and sand, and finally a sand coarser and coarser. Thus there are: first a coarse sand mixed with rounded stones; second, a fine sand deposited in regular and delicate beds; third, banks of clay in beds so fine that they are at times as thin as a sheet of paper. This is the

order of superposition of the first system, observed everywhere. Such a uniform deposit of thin beds of excessively triturated material, without mixture of rolled stones, and without internal modification, could only have been deposited from extremely and continuously tranquil waters. Yet it is found identical everywhere, and also in the valleys of the lateral rivers, the Tocantins, Xingu, Tanajos, Purus, Ica, Japara and the Rio Negro, in which last the Professor observed it up to the junction with the Rio Branco. More still, these same clays appear in the valley of the Maranahao, at Itapicuru, and in that of the Parnahyba, possessing the same characters and the same level. The bed which terminates the deposit and forms its surface is a kind of varnish, of a uniformly smooth crust, without erosion, which shows that the clays were not denuded after the formation of that bed. He believes *there existed primitively on this plain a glacier of most enormous size*, which resting on the side of the Andes sloped toward the ocean, and formed with its lowest extremity a tolerably elevated moraine. From the melting of this glacier resulted a lake whose waters rose to the level of the sandstone. The dyke, eaten away, excavated and threatened, yielded at last, and the waters rushed with furious impetus in the direction of the declivity, deeply hollowing the surface of the plain and cutting away the upper sandstone unequally. Afterwards, under quiet waters, the deposit of the upper clays were slowly formed. The principal streams have no described basins. There is not a single canal, there is a network of channels, the more complicated the more important the tributary. The anastromoses between the different streams are extremely frequent. Thus the Madeira sends an arm to the east, which after receiving various inferior branches joins the chief artery only at Villa Bella. This chief artery, in its turn, is likewise at times almost indistinguishable, and it is unknown whether these mutiple anastomoses are, or not, ancient beds abandoned by the Amazon. These anastomoses do not exist solely in the proximity of the tributaries; the Sonmoes joins the Madeira and the Amazon; further on the Japura extends ramifications reaching even to the Rio Negro. So the Amazon sends waters to its own tributaries to be afterwards received through these again. The conclusions of the geologist were then in brief: a basin elevated to a certain extent above the ocean, slightly inclined towards the sea, in which deposits were precipitated in parallel beds, an evident index of the tranquility of the waters; a basin completely closed in, a basin, finally, extending in other times much beyond its present limits. This last point is demonstrated by the identical nature of the clays and the sandstones found on the margins of the valleys of the Maranhao (at Itapicuru) and the Parnahyba. The dyke which closed in the Amazonic basin comprehended in its precincts the valleys of these two last rivers, or, rather, the valley of the Amazon did not terminate between Macapa and Maranhao. To form an idea of its surface it is necessary to mentally prolong this valley, and the continent itself, as much as is needed to render the Itapicuru and the Parnahyba tributaries of the Amazon—that is, at least one hundred leagues more to the east."

The same paper has a long letter from Agassiz on the subject of emigration to Brazil. While he admits that there is "no country in the world richer, more attractive, more fertile, more salubrious, more fit to be the focus of a numerous population than this magnificent valley of the Amazonas," yet he contends that immigrants cannot now overcome such serious obstacles as the administrative customs, which interfere with the rights of private individuals, the delays and formalities attending the practical occupation of land, and other forms of petty tyranny. He adds: "The opening of the Amazons will no doubt bring to its borders a number of industrious and enterprising men; but a great emigration such as rapidly augments a population will never gather there as long as the order of things exists which I have observed in the provinces of Para and Amazonas."

A Petrified Australian.

The London *Daily News* says that a petrified Australian male aboriginal has just arrived in England. This singular specimen of petrification was found in one of the stone caverns which abound in Musquito Plains, South Australia. It was lying in a natural position, as if fallen asleep; and a Mr. Craig, who was in the colony at the time in search of curiosities, got possession of the "black fellow" for the purpose of adding him to his collection. Traveling with his singular burden wrapped in a blanket, for nearly one hundred miles, he reached Mount Gambia, where his movements attracted suspicion, and the Crown Lands Ranger a-certaining that his bargain was a human being, sought the advice of a higher power, and relieved him of his prize. An action of trover was immediately recommended, and Mr. Craig succeeded in obtaining a verdict, with damages one farthing. The Government, however, refused to give up the "stone or other material," which was again placed in the cave. Mr. Craig, however, again went to work, and despite the heavy iron bars with which it was guarded, and the hardships he endured, managed to regain it and brought it in safety to England,

Mining Summary.

California.

Nevada.—The *Gazette* says: The new mill of the Empire Mining Company, on Ophir Hill, Grass Valley, was started up on Wednesday. From a number of our citizens who went down to see it start, we learn that the machinery worked finely. It cost about $100,000, and is doubtless the best quartz mill in the State. Connected with this mill are twenty-two pans and six settlers, together with all the modern improvements for saving gold and working the sulphurets. . . . The *Transcript* says: The hydraulic claims at Columbia Hill are paying exceedingly well this season. The pay ground is a strata of gravel extending fifty or sixty feet below the surface. After a run of five days, Willis & Phelps recently cleaned up $2,500. Cregan and Bowel in the same time took out $1,200. Wilcox & Co., Woods & Co., and others, are working with excellent success in their claims. . . . . One hundred thousand dollars were offered for one-sixth of the Allison Ranche mine, last week, and rejected. . . . A party of Chinese went out prospecting the other day, and struck a very fine quartz ledge on Deer creek, which is about two feet in thickness. . . . At Excelsior things are getting along finely.

Shasta.—The *Courier* speaks well of the mines of this county generally, and says: On Tuesday last we visited the Bunker Hill claim. The gold obtained is fine as flour, and is found imbedded in soft slate, in a thin strata of decomposed quartz. There are places in the mine where from $500 to $10,000 have been taken out in from one to twenty-four hours. . . . We are fully convinced, from a cursory examination, that the company would reap a rich return by milling all the slate rock in the lode. . . . Last week Messrs. Hall & Co. located a gold-bearing quartz lode near Hogtown, on Indian Flat. From twelve pounds of the rock, crushed in a hand mortar, two dollars was obtained; and besides this, the company have specimens weighing from one-half to two or three pounds, that would pay two or three dollars to the pound. They will commence taking out rock immediately, with a view to having it crushed in the Spring creek mill. . . . Daniel's claim is equal in novelty and perhaps in richness. He finds his gold as they do in the Bunker Hill claim—in seams and pockets, where small strata of quartz have decomposed and left it. He and his partner have taken out already sufficient, if judiciously invested, to make them comfortable for life, and yet have made but a very small opening in the mine.

Alpine.—The *Miner* is freighted with news as to mining operations, for which, however, we have no room this week.

Placer.—The *Herald* of June 9th, says: The Wells lead, three miles north of Auburn, has proved to be very rich. The company recently hauled some rock to Grass Valley and had it crushed. It paid over $20 to the ton. Some of the sulphurets saved from the crushing assayed $560 to the ton. Parties in San Francisco are now negotiating for the lead.

Tuolumne.—The *Courier*, of June 2d, says: This week we were shown some chunks of gold that were taken from a claim on Bald Mountain, on Saturday last. The sight of them was bewildering. They came from a pocket which in a day yielded to the labor of one man, 214 ounces of gold, and has not yet been worked out. The same person, last March, took out in one pan of dirt upwards of $2,000. . . . . We were told yesterday that some Mexicans, working about a mile below Jamestown, toward Quartz Mountain, struck a pocket on Thursday and took out $40,000.

Sierra.—The *Advocate* of June 9th, says: We are glad to hear that the claims on Silver Bow gulch are rising rapidly in value on account of striking the real pay channel, and the discovery of auriferous deposits in the bars lining the creek.

Trinity.—The *Journal* says, that all the miners employed at the New River mines are making money, water is plenty, and the opinion of old practical miners is that there are mines enough on that stream and its tributaries for a thousand additional men.

Calaveras.—The Copperopolis *Courier* of June 2d says, that but three claims are now being worked in that district, and asks, "are capitalists insane? If not, why do they not come and invest?"

Amador.—The *Ledger* of June 9th, says: One hundred and thirty tons of rock, taken from the Vaughn mine, at Pine Grove, was crushed last week, and yielded a little over four thousand dollars.

Siskiyou.—The Yreka *Union* of June 9th, says, Mr. Lash discovered a lode of rich gold bearing quartz last week on Humbug, which assays $601.07 gold, and $3.40 silver to the ton.

Colorado.

Our exchanges from Colorado are regularly crammed with mining news, so much of it indeed that we are forced this week to leave a great deal out, and thoroghly boil down what we put in, as follows: From the *Journal* of June 26th we learn that a quarter of a pound of Gov. Patterson's Belmont (Argentine) ore assayed forty-eight cents in silver. A working test of twenty tons is about to be made. . . . By the use of sodium-amalgam the yield of the Narragansett mill has been increased more than thirty per cent. . . . It is believed that the silver veins below town will yet amount to something. . . . In the course of a lengthy article the *Journal* says: We doubt not many will condemn this truthful portrayal of the condition of mining affairs. But we believe it far better in the long run than the system of lying and misrepresentation heretofore, and perhaps now, too prevalent. We are now producing about one thousand ounces of gold a week, coin value $17,000—at the rate of $884,000 a year. Suppose we assert and insist that we are producing at ten, twenty or fifty times that rate, as has been gravely done, will it alter or conceal the fact? We are going to produce less gold this season than in any before. We had hoped for better things. So had the public both here and at the East. When the season opened the indications were fair for a production of three millions. But there is no more doing now than during the last winter. The best of our companies, reputedly, get orders to shut down. We are calling for more money, notwithstanding we have had from five to ten millions, including original purchase money of the mines. We shall not get it, and our best mines being held by Eastern men who are discouraged, production will still further fall off. The world should know what the matter is—that it is no fault of the mines, but rather of the mistaken system that has been adopted. . . . . The *Register* appears in a dress worthy of that journal's contents. It says: Yesterday (June 25th) we made a short visit to some of our mines. First in order is that of the University Mining Company, on the Gunnell lode, under the management of John Armor. This company has one hundred and forty feet on the lode. The property was formerly known as the Alexander claim. As long ago as 1860, this property produced some of the finest specimens of visible gold in pyrites ever found in the country. It has never been opened to any great depth, however. The deepest shaft on it is only 240 feet. There is no safer shaft in the mountains than this. On this property, as on other portions of the lode, the walls, near the surface, are badly shattered, and consequently the body of ore is not as compact as could be desired. The ore exists often in pockets, rather than in a regular vein. Mr. Armor has now out, and piled up, about a thousand tons of ore, which ought to contain a hundred dollars per ton, or an aggregate of one hundred thousand dollars. The ore is quite free from quartz, and is the finest we have seen for many a day. It is a compound of sulphide of copper, iron, lead, zinc, &c. The present work is more designed to open the mine than anything else. The company do not propose to crush, or otherwise reduce their ores at present, but will await the experimenting of others. Some ten or twelve cords are to be worked this week by Keith. Mr. Dodge is also negotiating for a portion of the ore. A large mass of ore is still in sight in the mine, and as greater depths are reached, there can be no doubt but that the ore will improve, both in quality and quantity. But few mines on the Gregory vein have paid much till a depth equal to that of the shaft on this property had been reached. The company may flatter themselves that they are the owners of an excellent mine. The Gunnell Gold company are also at work, but we did not give their works an examination. On the Eureka lode, in Prosser Gulch, three or four companies are at work. The ore obtained is a combination of lead, zinc, copper and iron sulphides—the lead predominating, though the zinc appears likely to cause trouble on account of its amount. The mill of the Sierra Madre company is located on this lode, and is nearly ready to work. It is supplied with some of the best machinery we have seen in the county; but of this, we shall speak in the future. Mr. Taylor's shaft is the only one from which ore is now being raised. The Eureka company, under the management of D. S. Green, is putting up hoisting apparatus, and preparing for earnest work. This company has a good property. We next visited the mill of M. B. Dodge & Co. They are busily at work, but as Mr. Dodge was not there, we were unable to learn particulars. The machinery consists of a Dodge crusher, which breaks the rock in the same manner as the Blake crusher. From this machine the ore goes to a grinding mill of iron, closely resembling in form a set of mill-stones. Here, the ore is pulverized as fine as the finest flour. It is the finest reducing we have ever seen in the territory. When it passes from this machine, it is an impalpable powder. It is next passed through a sort of shaking table, so constructed as to bring the ore in contact with quicksilver before it can escape. For amalgamating perfectly, the ores have never, hitherto, been reduced fine enough. This apparatus, however, appears to accomplish this. Of course, it must work slowly. What the results obtained have been, we are unable to learn now. . . . . Editorial correspondence of the Denver *News* from Empire City, says: "The Knickerbocker mill is the only mill now running here. It is working top quartz from the Tenth Legion lode. All the mills at North Empire have shut down. Mr. Deeper is putting up a Behr & Keith furnace at the place last mentioned. . . . . The arrival of the Herman party is noticed by the same paper.

New Mexico.

The Hon. W. F. M. Arny, Secretary of this Territory, writes that, "Freed from Indians, this would prove to be one of the richest countries in the world, with capital and labor to develop it." "Before the war," he continues, "two copper mines were extensively worked—the 'Santa Rita' and the 'Hanover,' turning out about twelve tons of copper per week, and employing jointly about five hundred hands. Other copper mines have been opened, and were about to commence operations. A copper mine has lately been discovered a short distance from Fort Union; the specimens indicate it to be a rich deposit. The locality of this discovery will render it very valuable, as it is convenient for the return wagons from Santa Fe and Fort Union to the Missouri River. The mines in the 'Placer Mountain,' about thirty miles from Santa Fe, in former years have been productive. The 'Ortiz' and 'Cunningham' mines, gold-bearing quartz, in this mountain, have been worked for a number of years previous to the present war. When the Texans invaded New Mexico, there were about forty Americans at work in these mines, and in a run of the mill for twenty-four hours they obtained about $75 worth of gold. There is also near these shafts a coal mine several feet in width, and a short distance therefrom an extensive deposit of magnetic iron. I have some fine specimens of gold from this mountain which indicate its value. These mines have not been worked much since the rebels drove the operatives away, about three years ago. The Delgado silver mine, on the west of the mountain, is very rich, and

easily worked. With proper machinery and a little energy, this mine could be made very profitable. At Pinos-Altos some three hundred miners were at work in placer mining, gold quartz and silver mining, and this new district was bidding fair to be the first in richness on the frontier; new lodes were being discovered daily. Shortly after the war broke out, the Indians combined to destroy the town of Pinos-Altos. They made the assault in broad day, some six hundred strong, and having surprised the population, they charged through the town, and the inhabitants owe their salvation to a mountain howitzer. At San Jose a small force was engaged in quartz mining. Several companies had been organized to work in this district, one of which was controlled by parties from New Orleans. At the commencement of the war, a placer had been discovered in the 'Sierra Capitan,' where some three hundred Sierra miners, chiefly Mexicans, were at work and doing well.

Other companies were about to commence operations on the silver lodes of the Organos Mountains. The Stephenson Company had shipped a lot of machinery and material to work extensively the Stephenson silver mines. These reached their destination the very week hostilities commenced on the frontier. This includes the mining operations at the commencement of the war, and these were at different points in the Territory; other points had been prospected, and the precious metals are known to exist in abundance throughout the whole mountain portion of the Territory. Gold is known to exist in some twenty different localities in this Territory. It and silver must have been known and extensively mined by the Aztecs, as the presence of their old ruins is said to be an almost unfailing indication of mines. The Spaniards mined gold, silver and copper in this Territory, and Jesuit priests more thoroughly prospected it than it has been since. They reported at all points great riches, and the existence of all the precious metals. At Pinos-Altos, gold quartz mining received considerable attention. Thirty lodes were discovered, paying from $10 to $200 per ton. The richest of these was the 'Masten' lode. At one time some thirty arrastas were at work and paying well, but the Indians compelled the abandonment of the work.

In the Pinos-Altos district, thirty lodes of gold quartz were worked, ten of silver, or a combination of silver and gold, and three of copper. There has been picked up in one day in a gulch in Pinos-Altos ores of gold, silver, lead, zinc, magnetic iron and plumbago. Gold placer mining was quite successful, before the war, near Fort Stanton. It has been found in seven localities in the Sacramento mountains. At the San Jose mines, in the Sierra Madre, gold quartz was extensively mined by the Spaniards, and afterwards by the Mexicans. The quartz veins here intersect each other in all directions, forming a net-work of veins for one mile in width and three miles in length; the surface is dotted with shafts. On the San Francisco river gold, silver, copper and quicksilver have been found. Gold prospected in the bed of the stream from one cent to one dollar per pan. On account of the dangers from Indians, no further prospects have been made on this stream. Specimens of the gold found by Captain Walker and his party on this stream, and which are very fine, are in the cabinet of the Commissioner of the General Land Office. Gold placers are found throughout the mountains in this Territory, on both slopes, but water is scarce. Gold-bearing quartz has been discovered near Fort Davis, Texas. On the Mimbres river, or rather on the side hills in the vicinity of that stream, is an extensive placer; the Mexicans formerly worked it, carrying the dirt to water. A canal a few miles in length, at this point, I believe, would develop an extraordinary rich gold deposit. Silver is the prominent and most abundant mineral of the Territory, and the lodes of silver, with its many combinations, are the most numerous. I think it will be the most profitable branch of mining in this Rocky Mountain region. It would be too tedious to specify the different localities where silver has been found, as these localities would be numberless, including almost every mountain chain in the Territory. The principal districts known are the Placer Mountains, near Santa Fe, the Organ Mountains, near the Mesilla Valley, and the Sierra Madre, near Pinos-Altos. The Organ Mountains are extremely rich in silver; over fifty mines have been discovered, the ore being generally argentiferous galena, admitting of a simple reduction by smelting, the mines paying from $40 to $200 per ton. The district near Mesilla Valley, in the Organas Mountains, has a mean altitude of 4,400 feet, and is intersected with ravines, affording most favorable opportunities for horizontal drifts in opening the veins. There is a belt, or series of veins, containing six principal veins and many smaller ones, the six larger veins varying from two to fifteen feet in width. On the largest of these veins is the celebrated 'Stephenson' mine. This belt of veins crosses the Organos at or near the San Augustine Pass, and both sides of the chain of mountains present similar features and equal richness. The country bordering on the north portion of Chihuahua is a rich silver district. Just over our line are the mines of 'Corralitos,' the most successful mines in the State of Chihuahua. It has been mined for forty years in the worst Indian country of this section. Its productiveness has overcome all obstacles. It now employs several hundred hands. Near the old town of El Paso, tradition places the locality of one of the richest silver mines known to the Spaniards. Its site has been lost since the expulsion of the Jesuits. It is said that the Jesuits of Northern Mexico were toe last to suffer the effect of the decree of expulsion, and had sufficient notice of the edict, and carefully covered up the traces of mining, and placed the Indians under oaths and vows, with most terrible penalties, not to discover the whereabouts of the mines, telling them they would again return. In this way the localities of many of the richest mines of Northern Mexico have been lost. . . . The Santa Fe *Gazette* of June 23d says: Col. Carey and Mr. Hoffman returned to the city on Wednesday, from the San Francisco mines, and make favorable reports of what they there say. In these mines there is great abundance of copper, which contains silver and gold. It is said that the working of the copper, leaving out of question the gold and silver, would in itself be a most profitable undertaking.

Michigan.

From the Kenesaw (Eagle Harbor) *Times*, of June 30th, we condense the following: The Mendota suspended operations this week, but we learn that in all probability work will be resumed again in the fall if not before. The Mendota ore yields about ten per cent. copper and more or less silver. . . . Work at the Madison is confined almost wholly to the twenty fathom level, but north entirely of No. 3 shaft. They have here a stope of about twenty-five feet, which is showing remarkably well. The vein in the strope being three and a-half feet wide, while in the bottom of the drift it is but two feet in width. Considerable copper, both stamps and barrel, was taken out of the drift itself, and though the vein in the bottom of the drift is less in width than in the stope by eighteen inches, it is nevertheless stronger and better. Just at this point a mass of copper, weighing 2,482 pounds, was taken out a few days since, and still another is exposed. From present appearances it looks as though it might equal in size the one just taken out. During the past four months, working tribute, with an average of fifteen men, nearly eight tons of copper have been produced. The stamp-rock yields about two per cent. and is more largely charged with red oxide than any we remember to have before seen. The consumption of fuel is about three and a-half cords per ten hours, but it is safe to say that one and a-half cords of wood is used in supplying the stamps with water, leaving two cords to be consumed in driving sixteen heads of Cornish stamps, and stamping and dressing about a ton of rock per hour. The total force employed at present in and about the mine is twenty-three men and boys. . . . The same paper speaks very highly of the many advantages of operating in the ashbed belts, and continues: Independent of the ashbed proper—which is principally made up of stamps and barrel work—we find that it is traversed by numerous fissure veins, which, in the belts of rock underlying, are found indeed highly productive in masses, some of them the largest and purest yet found in this country. This may be regarded by some as too strong an assertion, but in proof, partially at least of the position we have taken, we have but to ask your attention to the "Elephant" now exposed in the Copper Falls mine, while at the same time we may point you to the overwhelming evidences of copper on the opposite side of this drift in which the mass spoken of is found. The Copper Falls vein is also immensely rich in stamps, mineral and barrel work, while at the Garden City the evidences of richness in the fissure is becoming more and more strong as the openings advance and the vein is uncovered. Indeed, in every instance almost, where the ashbed has been opened and worked, veins have been found, productive ones too. A recent visit to the Arnold and Humboldt properties, has thoroughly impressed us with the belief that an incalculable amount of mineral wealth lies hidden in the hills near us. At the Arnold, they have opened on the line of the outcroppings by crosstining pits and shafts, a distance of about eight hundred feet. At all the points opened on this property, we find the ashbed rich in stamps mineral with some barrel copper. The Humboldt, the adjacent property, has recently had opened upon it, and on the line of the ashbed about 1,400 feet, with very encouraging results, exposing more or less copper at every pit opened. The number of feet opened on the Humboldt, together with the openings on the Arnold, will give us a grand total of 2,200 feet of surface exposure of the ashbed, and as we have said rich enough to pay for working, perhaps the whole distance. There are also good wagon-roads to Eagle River and also to Eagle Harbor, distant three and four miles respectively. . . . The strike at the mines, says the Marquette *Mining Journal* of June 22d, has come to an end. The majority of the men have resumed work at the mines at the old wages, $2 per day. . . . The same paper says: The Jackson Iron Company shipped 430 tons this week, making a total of 4,565 tons. The Lake Superior Company have shipped 2,860 tons this week, making a total of 8,849 tons. The receipts over the Bay de Noquet railroad for the week ending June 17th were 2,639 tons ore and 7,848 tons pig this season. . . . The Portage Lake *Mining Gazette*, June 21st, has the following: A new and important discovery of a large bed of plumbago (graphite, or black lead) has recently been made on the South Range, showing conclusively that we have not yet ascertained all the metallic deposits of our remarkable mineral country. This is not the first discovery of this mineral which has been made in this region, but appears to be the first likely to be of any commercial value. Several years since an inferior quality of plumbago was found near L'Anse, but it contained too much foreign matter to be considered of any real value. The specimens shown us this week are of a much finer quality, and have stood the few severe tests applied to them, in the most satisfactory manner. Subjugated to a most intense heat, this mineral neither fused, cracked or even checked. It is quite soft, quite easily cut with a knife, has an ordinary metallic lustre, and is almost entirely free from gritty particles. Pieces used as marking pencils color well and very evenly. Specimens of this and the L'Anse plumbago can be seen at this office any time during the coming week. . . . Most of the Portage Lake mines seem to be doing well. Among them may be named the Calumet, South Pewabic, Hancock, Isle Royal, Sheldon, Columbian and Huron. . . . The Keweenaw *Times*, June 16th, says: The product of Copper Falls for the May month was: stamps, 56,611 pounds; mass and barrel, 29,187 pounds; total, 85,798 pounds, or 42 tons 1798 pounds. About 15 tons of the large mass has been blown down, and the work of resuming is progressing finely. In the cross-cut at the 20 fathoms level a mass is exposed, but of its size no estimate can be formed, as they have but just reached it. This is the first mass, we believe, ever found in this level. The shaft has been holed, and the work of perfecting and making it available for use is being pushed with vigor. . . . The product of the Central mine as reported to us for the month of May was in round numbers 75 tons; and that of the Amygdaloid 32½ tons. . . . About eighteen hundred feet of remarkably rich ashbed has been recently brought to light between the Humboldt and the Arnold. A small party of men are now engaged in exploring. We look for grand developments from this quarter. . . . The works at the Essex mine are progressing favorably. No. 2 shaft is down within 15 feet of the first level. With this connection the mine will be well ventillated for summer work and enable them to drive north to the Greenstone, and sink No. 2 shaft to a second level. The copper prospects are so favorable that the work will be prosecuted with an increased force. As a portion of the Eagle Copper Company's property, this mine, with a division of about 800 acres of land, has good prospects ahead.

Montana.

Helena correspondence June 6th, says: On the 1st inst. John Bristol cleaned up, from a ten hours' run, with four hands, on a bar claim at No. 2 below discovery, in White's Gulch, $1,265, a nugget almost perfectly round and free from quartz, weighing the odd $265. . . There was quite a stampede to Harmony Gulch, not far from this place, on the 31st ult., but it wasn't far enough off to create much of an excitement. . . . A letter in the *Post* from Bannack, May 28th, says: The Grasshopper has been higher during the past week than it has been since this gulch was first discovered. The Bannack Ditch Company have every prospect of doing well when they get fairly to work. Last week, on Nugget Hill, they took out twelve dollars and upwards to the hand, and their ground was improving. We expect larger results from other placers which they are preparing to work. Some of the gentlemen belonging to the McLean Silver Mining Company have arrived. Work is progressing finely on the Eaton lode, and the recent developments are of the most substantial kind. The Esler & Bender Mining Company, of Montana, are doing very well here. They are organized according to the New York State laws, and have $100,000 working capital, which will be expended mainly in the development of the silver ledges, of which claims, measuring 15,350 feet, are located in the district of Rattlesnake. The White Cloud, Prize, Superior, United States, Empire State, Dictator, New World, Red Chief, Hamilton County, Tornado and Bender, are all considered fine lodes, and Mr. Esler's discovery—the Legal Tender—is unsurpassed by anything in the Territory; the mean of assays performed by different scientific individuals, varying from $507 87 to $865 42 per ton. The company have also 8,291 feet of gold lodes in Bald Mountain district. Smelting furnaces will be erected on the Legal Tender mine in early spring. Messrs. Bender & Ream have realized, by home sale of part of their discoveries, $60,000, and we would advise parties having good property to sell it at home, and not to part with it for small prices in New York. The furnaces that will be in operation in Rattlesnake district this summer, will prove the truth of the repeated assertions of scientific and practical men concerning the great richness of the lodes around Bannack. . . . A letter from Silver Bow, May 28th, runs thus: There are placer claims in the vicinity which are yielding largely; and I hear of one from which, out of one pan of dirt, $90 was obtained. I am of the opinion that, if the waters were not so high, Silver Bow would now be yielding more gold, according to its area, than any other camp in Montana. The Silver Bow mining district is not only confined to placer diggings, but has some of the finest quartz ledges that I ever saw, and among them is the "Brady" ledge. This ledge has a shaft sunk to the depth of forty-five feet, and has a crevice which, at the bottom of the shaft, is about nine feet wide. The rock is both silver and gold bearing—silver predominating. If such a lode will not make the proprietors safe in investing in machinery, then I don't believe in either iron works or quartz leads. Another good ledge in this district is the "Mauritius," owned by Mr. Wm. E. Harris. The rock from this lode is very rich in silver; the crevice is near the surface, about four feet in width, and is well defined; the wall rock is a solid granite, and it is in one of the prettiest places for working that a ledge could be situated in. . . . Says the Virginia City *Democrat*: The rich placers of Wisconsin Gulch, about twenty-two miles from here, are about six miles long, and the extent and variety of the deposit is such that it will take many years to work them all out. We learn from a settler that a party of our men took out one hundred and sixteen ounces in one week, and that Bill Fairweather's hydraulic is doing well. Really, the citizens of Virginia have reason to be pleased and thankful for the superior advantages they enjoy in point of position. Wisconsin, Granite, Alder and Bivens' gulches, Ramshorn, Mill Creek, Hot Springs and the lode country, including the far-famed Summit district, all around us, are foundations on which to build a city worthy to be the permanent capital of the Territory. . To all appearances, gulch mining, under the old system, in Nevada district, is among the things that were. Thousands of tons of tailings come down the gulch daily from the various hydraulic claims that are in operation opposite Virginia, filling up side ditches, breaking over pits, and rendering useless all the labor and expense incurred since the freshet of May. There are yet millions of dollars in Alder Gulch, and the sooner the miners realize their true position and adopt measures for getting in a flume and taking out more clear money than was ever taken out of the gulch, the better for themselves, as well as for the community at large. Hydraulic mining is beginning to assume quite an importance in our community. On the bars west of the city which, with the exception of some drifting, have for some time past remained comparatively idle, there are now some eight or ten companies busily and profitably at work. With a greater supply of water for the ditches, this number would be double or even quadrupled, and as our enterprising friend Mc. is hurrying up his ditch, which is to carry the water of Wigwam Gulch to our assistance, we may soon expect to see our hills redouble their present prosperous activity.

Nevada.

The Comstock.—The San Francisco *Weekly Stock Circular* for June 16th states: The Mining Share market was decidedly apathetic early in the week, but during the past few days rather more life has been exhibited, and a number of stocks are now in better request at enhanced rates. There is, however, an almost total absence of speculative inquiry among dealers, and transactions at the Board have been lighter than for six months past. . . . Crown Point has met with no sale this week, but is well held at about $1,160. During the week ending June 10th, 671 tons of ore were hoisted to the surface. It is said that considerable first-class ore has been disclosed recently, and that the south drift on the 300-foot level is looking particularly well. The average yield of 2,467 tons of ore last month was $44 per ton, and 92 tons of first-class ore averaged $428 per ton. . . . Savage is in better favor, advancing from $660, seller 30, to $695, buyer 10, then selling at $1,010, and closing at $1,025 bid. During the week ending June 9th, 591 tons of second and third-class ores were hoisted from the mine, the upper stations yielding 105 tons, and the balance coming from the sixth, and the winze sunk twenty feet from the latter is said to show good ore throughout the whole distance. The body of ore in that level continues to extend toward the northwest and southeast, and two months' work has not yet exhausted two floors of the ten to the fifth station. The old shaft has been sunk seventy feet below the sixth level. . . . Hale & Norcross has been sought for at higher figures, and some eighty feet were dealt in within a range of $962@$1,000, selling yesterday at $950@$960, ex-dividend of $50 per foot. A decided improvement has taken place recently in the *quality* of the ore met with in raising up from the 700-foot level. The drift from foot of incline (780-foot level) is vigorously under way. . . . The Gould & Curry rose to $745@$750, and closed at about $700 bid. There is nothing new in the lower explorations, but the upper portion of the mine continues to hold out remarkably well. In January last the superintendent of the company estimated that some 30,000 tons of ore could be taken from the upper levels. Since then more than that amount has been extracted, and from present indications it would appear that 25,000 to 30,000 tons remain. . . . Yellow Jacket rose from $635 to $660, receded to $635, rallied to $675, and was dealt in yesterday at $690@$695. Private letters speak favorably of recent developments, and it is probable that the present balance at the credit of the company will be materially increased at the close of the current month. . . . Ophir steadily advanced from $295 to $352½, and sold yesterday at $355@$340. The eighth floor of the ninth gallery still shows ore going south, but it is of low grade. The eighth gallery has been cleaned out, and the development of the top of the ninth will thereby be much facilitated. Some twenty tons of ore per day are now taken from the fifth station, and receipts of bullion to the 12th inst. amounted to $21,000. . . . Chollar Potosi has been actively dealt in, and nearly 600 feet were sold within a range of $187½@$212, closing at about $203. The Piute station is producing about the same quantity of ore as formerly, and the new Santa Fe station continues also to look well. The superintendent reports, "in other parts of the mine no material change," also remarking, "it is pleasing to mention that the mine generally presents a more flattering appearance than for some time past." The first station drift from the new shaft is in some 475 feet, but recent indications are thought to be less encouraging than they were last week. During the week ending 9th inst. 618 tons of ore were sent to custom mills. . . . Alpha rose from $300 to $350, declined to $320, and then sold at $250. . . . Belcher steadily advanced from $160 to $194, and was dealt in yesterday at $8190@195. . . . Empire Mill and Mining Company was sold at $140@$142½, seller 10, closing at $150 asked. . . . Imperial receded from $112 to $107, rose to $122, and sold at the close at $117@$110. It is thought that some 10,000 tons of ore (worth $25 to $30 per ton) may yet be found above the sixth level of the Holmes mine. . . . The *News*, June 11th, brays quite loudly thus: The Gold Hill mining companies are going in—to the bowels of the earth, and the richness thereof. Gold Hill mines are giving out—more bullion than all the balance of the mining districts in the State summed together. To-day Wells, Fargo & Co. shipped 13 bars, weighing 798 pounds, and valued at $20,695 02. There were shipped from the Gold Hill express office, during the week ending June 9th, 85 bars of bullion, weighing 5,173 pounds, and valued at $144,111 62.

New Truckee.—The *Enterprise* tells of a lot of ore from the Morning Light ledge, New Truckee District, weighing five hundred pounds, which recently arrived from there, packed in on a jackas train under command of Col. O'Reilly. This ore, from personal inspection, it pronounces rich, and declares there are millions upon millions of tons of the same sort left. It is very heavy, containing a large amount of augentiferous galena, antimonial silver, and sulphuret of silver. About a year ago the company owing this ledge got 1,900 pounds of the ore worked at Winters' mill, Dayton, which yielded silver $45 52; gold, $44 10; total, $86 62. This was an excellent yield, but the tailings assayed at the rate of $325 to the ton, showing that for want of a proper mode of working much of the precious metal was lost. An assay was also made by W. T. Rickard, assayer of this city, day before yesterday, of a piece of ore from a streak of whitish, soft ore in the ledge, which yielded to the ton: gold, $10 04, silver, $23 56; lead, $37 80—total, $71 40 to the ton, showing lead to heavily predominate. Mr. Rickard is of the opinion that this streak of ore can be easily reduced, and should work to within ten per cent. of the assayed value. The Morning Light is one of a series of three ledges crossing Mineral or Say's Gulch, New Truckee District, some thirteen miles east of the lower end of Pyramid Lake. These ledges are from fifty to seventy-five feet apart, well defined and crossing the gulch at about right angles, running in a direction N. N. E. by S. S. W., and with a "dip" or inclination to the east of about ten degrees. They are known as the Northern Light, Moonlight and Morning Light, and from their peculiar location can be worked cheaply and with the greatest facility.

Columbus.—A correspondent of the *Enterprise* writes: A day or two since, I was shown by Mr. L. Smith, our District Recorder, a piece of bullion weighing 39 ounces, the result of 297 pounds of ore, worked by John Midson of Montgomery, the assay value being 80 cents per ounce. The ore was taken from the Stamp, a claim situated a mile and a half north-east of town. They have a shaft down 25 feet, and feel confident they have a good paying mine. I was also shown by the same gentleman another piece of 31 ounces, worth 80 cents in silver and 15 cents in gold to the ounce, taken from 192 pounds of ore from the Revenue, a claim situated six miles further in the same direction, in a portion of the district generally known as the White Ledges. There nature in her upheavals appears to have given an extra surge, and literally ribbed the mountains with quartz veins; but for the most part they are composed principally of almost pure white silica, with but very little mineral indications, though there are several valuable exceptions, among which is the Ural, which probably shows more pay ore on the surface than any other ledge in the district. The two principal locations on it are mostly owned by Dumay and Durand of this place and Kraus and Kepler of Aurora. They are down 15 feet, at which depth the ledge is 4 feet thick and almost solid ore. The Alpine, owned by A. C. Higbee & Co.; the Blue Jacket, Dumay, and several others, all contain good ore, but have been but little prospected yet. Eight miles west of town is another group of ledges, known as the Candaliara Ledges. From three of these, the Northern Belle and Potosi No. 1 and No. 2, Mr. A. J. Holmes took a small lot of ore to Austin, which he informed me worked over $700 per ton in silver—proving so rich that he has immediately returned with Mr. Wm. Gibson, the company's agent, and taken a ton for farther trial; and if it proves as good as they anticipate they will proceed at once to open their mine and build a mill.

Philadelphia.—Colonel David E. Buel returned to town yesterday afternoon from the Philadelphia District, with samples of ore from a number of veins. The Colonel has been subdued by large experience, and is not disposed to indulge in hyperbole over everything in the form of a ledge, and he pronounces the prospects of the district to be splendid. Assays just made of ore from this district are: from the Canavan Ledge, yielded $931 49 per ton; Silver Champion, $2,657; unknown, (ore deposited by John Frost) $430 98.

Pahranagat.—Gov Blasdel and suite have been visiting this rich but remote district. He says good roads can be constructed to reach it.

Lander.—The *Rereille* of late has contained several items from remote mining districts, but none from its own.

Arizona.

A letter to the *Alta* from Prescott, May 20th, says:—Three or four mills will be in operation hereabouts at an early day. The quartz is expected to prove very rich, and it certainly is very abundant. On Lynx Creek, fourteen miles from here, the Accidental lode has been worked by a two-stamp mill, and with most satisfactory returns. A recent clean up yielded one thousand dollars from three tons of the rock. Shafts are sinking upon other lodes, such as the Eureka, the Dead Wood, the Pointer and the Boston, that promise quite as well. In the Big Bug district and the Woolsey district, within twenty miles of this place, the prospecting is very encouraging. A ten-stamp mill is in course of erection at the former place, and a large water mill at the latter. Mr. Ehrenberg, the well known mineralogist and mining engineer, has been on an extended tour through the districts in this part of the Territory, and speaks of them in the highest terms. . . . . William T. Grant writes from the same place: All the fellows appear to have lost their snap. However, they all seem to like the country; every man owns from five to twenty-five thousand feet in gold-bearing ledges, which they believe will one day make them rich. Very little prospecting is being done for new lodes, as the Indians are troublesome, and the miners generally are contented with what they have. I don't rely much on their judgment of quartz, as they are mostly from Colorado and the sheep ranches of California; there are, however, a few miners from Esmeralda, in Nevada, who have had varied experience in quartz, who express their satisfaction with the prospects of the country. Owing to hostile Indians the country hasn't been fairly prospected. A man named Lamson, formerly of Gold Hill, in your State, is here with two Thunderbolt Crushers, one of which he is putting up on some mines belonging to parties here, who have agreed to furnish him a certain amount of rock. He thinks he can crush at the small cost of $2 50 per ton, and if the ore pays as well as he anticipates, he will put up the other mill also. About forty miles from Prescott there is a mill running on the Vulture lode, which was sold recently to a New York company. Swelling's party, about sixty strong, and well armed and mounted, will start on the 20th instant for the White Mountains, about 250 miles to the eastward. He claims to have been there and worked, and to have taken out gold as high as $50 to the pan, but that the Apaches broke up his camp and drove him off. Everybody seems to confide in his story, and we all believe he will lead the party to good diggings. I hope it may be true; but the fact is, we are all so infernally hard up that we are willing to swallow anything if it is only large enough. I can't write certainly about the quartz ledges in this section, for they are almost wholly undeveloped, and I have heard of but one that had been sunk to the depth of sixty feet. But there is plenty of game, and I have grown fat on delicious vension. . . . The news from Arizona is decidedly good. The *Bulletin* says: "Hermann Ehrenberg, a well-known geologist and mining engineer, has been examining the mines in Big Bug District, and pronounces them superior to any mines heretofore discovered. He speaks of them as being 'large, distinct and well-defined.' We make the following extracts from a private letter written by Mr. Ehrenberg: 'Bergen & Co. have all the mill timber on the ground and their machinery is on the way up from La Paz. They expect to have their mill running in July. They are working two lodes—the Big Bug and the Galena. The Big Bug can be traced for a mile in a straight line, and is yielding some beautiful ores of a singular character. A shaft is down some 70 feet, and about 50 tons of ore, some of it very rich, taken out—work still progressing. The Galena is a large, fine-looking fissure vein. Two shafts have been sunk about 15 feet and about 70 tons of good ore taken out. Eight men are at work taking out ore. The Eugenia, owned by them, is of enormous size, and can be worked with great facility, there being an abundance of surface ores. Plenty of ores can be obtained to keep the mill running. Woolsey's 5-stamp mill be running in a week or so. On Lynx creek Tyson & Co. are opening the Eureka vein—are down about 20 feet—ore good, and, I am told, still improving. They are getting out timber for their mill. One of the Thunderbolt crushers is to go on the Stirling vein, 7 miles from here; the other in the Hassiampa. On the Accidental, where they have a pony 2-stamp mill, I hear they crushed three tons of ore which yielded $1,100. A few hundred yards from Bryer & Co.'s mill, four men having made a flume to bring water into a gulch, washed out $300 last week. There are a great many other such places, if men could only work them safely. Jack Swilling's exploring expedition, numbering about 150 men, well armed and equipped, will start out from the Pima villages on the 1st of June. We have had no Indian troubles of late, nor any military movements, except a report that Capt. Washburn of the brave Arizona 1st is to start out towards the White Mountains on the 8th of June.

Illinois.

The coal measures in St. Clair county, Illinois, are being rapidly developed. The product has doubled in five years. It amounted last year to 384,499 tons, all of which was taken from mines in sight of the Belleville and East St. Louis Railroad, between Belleville and Centreville, a distance of seven miles. New mines have been opened along a six foot strata, five miles west of Belleville, by the Illinois and St. Louis Railroad and Coal Company. The company have built a track from the mining settlement, which they have christened New Pittsburgh, to the Mississippi, opposite St. Louis. The company own tow boats, and their cars are run along the dike for some distance into the bed of the river, where the barges are easily filled. The company have just begun operations. That they have faith in their mines may be evidenced from the fact that they paid the St. Louis, Alton and Terre Haute Railroad $20,000 for the privilege of crossing the Belleville track, and propose to mine and transport coal so cheap that it can be furnished in the St. Louis market at twelve cents a bushel. It has been eighteen and twenty cents heretofore. The company began running trains some two weeks ago. They already mine 8,000 bushels a day, which will be increased to 20,000 in thirty days. The company have two locomotives and seventy-six cars, which deliver on board barges at the foot of the "pier" between 30,000 and 40,000 bushels daily. The "pier" has been built over the long, low sandbar, reaching out in front of the beautiful commons of Cahokia. The river at this point—including the sandbar—was probably 4,300 feet in width, rendering the channel somewhat shallow. The "pier" has been constructed of solid stone, from the main shore out into the river, a distance of 2,300 feet, at a cost of $150,000. The distance from the face of the pier to the levee on the Missouri side is about two thousand feet. The miners in St. Clair county have heretofore had everything their own way, demanding and receiving during the winter and spring seven cents per bushel for mining. But the influx of miners has become so great, and competition so active, that the "Union" got somewhat demoralized. They backed down to five cents per bushel a month ago, and last week went down to three cents. There are miners plenty at these rates. A good miner can get out seventy-five bushels per day. This at seven, or even five cents per bushel, was more profitable to labor than to capital. . . . . Messrs. Brown, Butler & Co., of Youngstown, Ohio, have opened a new coal mine at Danville, Illinois, on the coal lands of Capt. Frazier. The walls of the shaft at these works are said to be cemented from top to bottom, in such a manner as to effectually shut out the water.

Oregon.

In the Eastern portion of this State, both placer and quartz mining is becoming more vigorous. The *Mountaineer* says: The bed of Canyon creek, the flats at the mouth of the creek, and the newly discovered prospects on the main John Day river, promise well to employ thousands of laborers for years to come; that is to say, of that class who can and will work for a compensation of from $3 to $5 a day. . . . The mines on the middle fork of John Day are confined to three creeks or gulches, which empty into that stream from the north. Going down stream they are named respectively, Elk creek, Deep creek, and Buck gulch. These creeks appear to be crossed by a range of gold-bearing rock from two to three miles up each of them, and from this rock has been dislodged the heaviest lumps of gold ever found in the John Day mines. . . . Mr. Milliken, whose claim is in Elk creek, a few hundred yards above the town, brought in to have weighed a nugget of gold weighing, at $16 per ounce, $205. Mr. Hardy, on Deep creek, obtained from his claim last week, a piece worth, at the same rate, $150. . . . New placer mines have been discovered on the hill side below the Elk creek quartz ledge. In one place four men in a run of two weeks cleared up seventy ounces of gold as fine as that coming from a battery. They have laid the Elk creek quartz ledge perfectly bare as deep as their cut is worked, and the dirt they have washed off, and from which they have obtained such rich pay, is evidently a mass of decomposed quartz rock from that ledge. . . . . On the south side of the main John Day, nine or ten miles below Canyon creek, is the cinnabar

lead, of which so much has been said. . . . At the time of the discovery, a gentleman residing in Canyon City at once forwarded some pieces of the croppings to San Francisco for assay. The assayer's certificate attests that the ore yielded at the rate of $52 22 in gold, $3 50 in silver, and contains 14 3-4 per cent. of quicksilver. The cinnabar is held in a frame of sillicate. The proportion of quicksilver greatly increases as the lead is sunk upon; but whether this offsets the proportion of the more valuable metals is not determined. Most likely such is not the case, and whether the ore proves valuable to work for quicksilver or not, it is reasonably certain that it will prove very valuable for the precious metals which it contains. The facilities of abundant timber, exhaustless water-power and a mild climate attend this valuable mining property, and its improvement and development must speedily take place.

Mexico.

A travelling correspondent of the *Bulletin* writes relative to his trip in Lower California as follows: "At Todos Santos the gold indications are conspicuous, and some has been washed in a small creek a few miles from the town. There are also several copper veins, and one very fine specimen was presented me that I should have pronounced from Calaveras county. From Todos Santos to the Junta, the locality of the late gold excitement, the road was covered with sharp quartz pebbles that made our unshod horses wince at every step. Nature has assisted but little to separate the precious ore. The creek beds have been washed for many years and to carry the water in ditches to wash the deposits of top dirt will require more enterprise and capital than can be found here at present. After leaving the Junta we passed the Valley Perdido, once famous as a gold mining locality, and saw the old hacienda where auriferous quartz had formerly been worked. A lead of argentiferous galena is now being worked here to supply reducing furnaces lately erected in the Gallinos. They are on the Mexican plan—the blast given by horse power. The contrivance is simple and does not appear to be expensive. At Triunfo we found the Company's mill. Mr. Brooks, the agent of the Company, who lately negotiated the sale of the mines and mill, at the East, is now absent in San Francisco procuring machinery for the addition of fifteen more stamps, for which the power was originally intended. The Triunfo Company has been consolidated with the Philadelphia Company and now combines the ownership of several valuable mines, two only of which I had time to visit. This Company, regularly organized in San Francisco, has thrown away one of the most valuable properties in mining history, and afford another evidence of the effect of the mining panic in California. The Mendocina mine is on the great vein that traverses the entire length of the San Antonia and Triunfo mining districts. The two mines of the Mexican Company, from which the ore taken has been shipped to Europe for the past eight years with such profitable results, are on the same ledge. The Triunfo Company's claim comprises 800 metres on the lead, and has been opened 150 feet south of the Mario ground by an inclined shaft on the lead which dips with an angle of 20 deg., and the rock is raised by a horse power whim. The 100 feet level is opened north and south 250 feet, the 200 feet level 150 feet north to the Mario ground and south the same distance. The levels are connected by air shafts all of which communicate with the tunnel of the Mario at the lowest level of the works, securing good inclination. All the ore heretofore taken from this mine is out of the drifts and shafts, all of which, throughout their whole extent, are in good pay ore, varying in thickness from 2 to 12 feet. It may be safely estimated that all the ground opened will average 4 feet in thickness of ore that will work $50 to the ton. Allowing 7 cubic feet to the ton, the space between the first and second levels will yield above $16,000 tons; allowing an equal amount of ore below the 200 feet level, and half the quantity above the first level, will give 40,000 tons—sufficient to employ a 25-stamp mill, crushing 20 tons per day, (300 working days in a year,) six and a half years to reduce, without considering what the other mines of the Company will produce. They need at once a 100-stamp mill. It may be safely estimated that the cost of raising ore from this mine will not exceed $3 per ton for some time to come. The difference in the price of labor and fuel between here and Washoe—less than one-half—will make the cost of reducing, including roasting, about equal to the expense of amalgamations in Nevada. The timber is infinitely better and cheaper here than in Virginia or Gold Hill; the best of live-oak timbers averaging 8 inches in thickness (equal to 12 inches of pine) and averaging 8 feet long, can be laid down at the mine for $8 each. The Molenena mine is on the same vein and adjoins the Mendocino on the south; it has been explored to the depth of 100 feet, and contains ore paying as high as $250 per ton. The work here presents another example among the many exhibited in this district, of incompetent management—a fact to which more than all others we are to attribute the failure of our mines to satisfy the expectations of stockholders. How is it that merchants who would not think of sending their ships to sea without a navigator, send men to open mines involving the outlay of thousands of dollars who are entirely ignorant, not only of practical mining, but devoid of mathematical knowledge sufficient to enable them to reduce the angles and measurements required to determine the position of the vein below the surface? They enter at once upon projects without the capacity to calculate the advantages or expense of their undertakings. From these causes have resulted the useless expenditure of hundred of thousands of dollars in Lower California. There is scarcely a profession or trade that has not had a representative among our superintendents—the profession of mining being nearly in every case the exception.

British Columbia.

From the Victoria (V. I.) *Colonist*, of May 29th, we condense the following:—Canyon Creek is creating great excitement, and specimens of gold received at New Westminster are said to be worth $18 per ounce. . . . . A Yale telegram states that at French Creek, on the 12th May, the companies had commenced taking out pay. The Discovery Co. on the 11th washed up three and a half ounces. They are greatly troubled with boulders. The Monroe Co. took out 22 ounces in three days. Several other companies were setting to work, but the water in the creek was rising very fast, which may delay operations. Six or eight companies on McCullough's Creek were taking out good pay from surface diggings. Provisions were ruling at the mines as follows: Flour 60c.; bacon $1 75; beans 75c. per lb. It was understood that more than 500 men were waiting at Little Dalles to get up by the Forty-Nine to the mines. . . . . Numbers of Chinamen were at work on the Similkameen doing well. . . . . Those who gave such gloomy accounts of the Big Bend mines, now admit that they went there too early in the season to judge. . . . . A correspondent writing from French Creek, Big Bend, says: "During the last few days a large number of men have arrived on all the creeks, and a great many are busily employed putting up cabins and commencing to mine. Several good prospects have been found by different companies on Clement's Creek, but I have heard of no one reaching the bed-rock this season, except in one or two places in the benches, in which cases nothing of any account was found. Camp Creek, which is the first creek emptying into Gold River from its mouth, is now attracting some attention, a number of claims on which are being prospected, but I have not heard of anything being struck except by the Discovery claim, which I believe was partly opened last year. On Clement's Creek the old companies are working with good results, but what the pay of any particular claim is I am unable to say; one of the new companies are reported to be making $25 a day to the hand. On this (French) creek but one or two companies have commenced to wash, as yet, but all are getting ready, and in my next I hope to give you a good account of the pay. Downie Creek, emptying into the Columbia near Kirbysville, is now well spoken of, a rich strike having been reported there. Judge O'Reilly arrived on French Creek two or three days ago, and has been busy issuing licenses and recording claims; French Creek is now claimed for some seven or more miles, as well as one or two small creeks emptying into it. Parties are out prospecting, some having gone, even this early, over the Divide to the other side of the Big Bend, although I think they are entirely too early to do any effective prospecting." . . . . At Cariboo, mining looked brisk. On William's Creek extensive preparations were being made for working claims above Richfield, where some of the companies have been making fair wages all winter. The Bed Rock Flume Company had been blasting extensively and got through the most difficult part of their work. The Moffat Company, which yielded well formerly, and the Caledonia and Arabian companies were in a fair way to turn out good pay again this year, as were also the Watson, Davis and Aurora companies. The last named had washed up 135 ounces in three days out of their new tunnel. The Foster-Campbell company are at work with good prospects. The claims in the creek near Barkerville are awaiting the completion of the drain, which will be up in about two months, as they are working it out of the Cariboo shaft now. The Cameron company, Dead-Broke company and Adams company, have been paying more than wages all winter. The Forest Rose have struck pay in their new tunnel. The Prairie Flower company have commenced work by running a new tunnel and drain to facilitate their operations this season. This claim is expected to be a "big thing" this year. The Tontine, Forest Hill, and other hill claims, down to the canon, are going to be worked with hydraulic power, and are ready to commence as soon as the water commences to flow freely.

Canada.

The Perth *Expositor* calls attention to the rich iron deposits in the vicinity of that town. Our contemporary claims that the iron ores of the county of Lanark lie within one third of the distance from navigation and railway that the Marmora deposits do. It continues: "Some of the iron ores from South Sherbrooke have already been tested at places in the United States, and were pronounced excellent, and from what have been shown us from the township of Bathurst and that part of South Sherbrooke surrounding Myers' Lake, we are satisfied that the quality cannot be surpassed. A company has, as we mentioned in our last issue, been organized to erect smelting works in connection with the Watson property, in South Sherbroke, and this, with the phosphate of lime companies that are expected to be at work next season, will probaly attract more attention to the vast mineral resources of this city. We frequently see in the *Globe*, and other Western papers, accounts of the wealth in minerals, shown by the developments on the shores of Lake Superior; but it seems to be utterly unknown that within a few miles of the Rideau, and of the thriving town of Perth, there exists equally rich deposits of many of the most valuable metals and minerals, in a part of the country, too, where labor and provisions are cheap and easily obtained, and the cost of transport would be reduced to a minimum. We trust that the companies mentioned by the *Expositor* will find their undertakings most successful. The Brockville and Ottawa Railway will, no doubt, aid materially in developing the immense resources of the county of Lanark, while the richness of the deposits and other advantages mentioned are important considerations. The *Expositor* gives a list of some of the valuable minerals found in that vicinity, which we quote: Magnetic Iron—of various qualities and immense deposits, which are practically inexhaustible, yielding from 60 to 80 per cent. Red Hematite—An immense bed near Playfair, 11 miles from Perth Station. Micaceous Red Iron—Of excellent quality, near Bathurst. Apatite or Phosphate of Lime—Extensive deposits in North Elmsley and North Burgess. Galena—Most promising vein in Laurentian Limestone, near village of Lanark. Plumbago—In Lanark, Bedford and Burgess. Copper—In several localities in North Burgess. There is also a very large extent of copper-bearing rocks in townships of Levant and Darling. In Levant, last season, some explorations were made by Mr. Hutchins, of Montreal with very promising results. Cobalt—Specimens have been obtained in North Burgess. Nickel—Specimens of this metal have been obtained in North Burgess. Antimony—Has been found in Bedford. A glance at Sir William Logan's reports will show that this list might even have been made longer. Quite enough is given, however, to show that the mineral deposits of that section of the Province are well worth the attention of capitalists.

New Grenada.

It seems from our exchanges that Californians are still constantly migrating to the "mines" of Barbacoas.

Oil Summary.

Pennsylvania.

The petroleum wells of this state continue to improve somewhat; but since our last issue nothing of importance has occurred in the oil regions save an extensive fire on Bennehoff Run, by which calamity about fifteen wells were burned, the loss being stated at $89,500. About the same time a fire broke out on Bird well, Egbert Farm, causing the destruction of the engine house. On Saturday last a fire occurred on lease No. 7, Pioneer Run, owned by Frank O'Harra and Williams, on the Shoe and Leather Company's property. This well commenced flowing at the rate of 200 barrels per day on the same morning, and not having facilities for storage, the large amount of gas caught fire from an adjoining engine. All above ground was completely destroyed, together wite the engine house of lease No. 6.

Tennessee.

According to the *Tribune*, oil has been struck in Overton county, Tennessee, on the north line of that state, about midway from its eastern to its western border, eighteen miles from the Cumberland Mountains. Already three wells are pumping, three more being bored, and four others started. The Newman well, only thirty-eight feet deep, yields ten barrels of heavy lubricating oil per hour. Another, only twenty-three feet deep, yields to a hand-pump fifty barrels per day. The country is mountainous, the roads bad, and a railroad to the Cumberland indispensable. The location is about fifty miles E. N. E. of Nashville.

California.

The Colusa county *Sun* says: Mr. Whiting has spent $20,000. In going doing 607 feet, he has gone through six different streams of oil. He intends now to pipe the well down and then cut the pipe at each of these. His best indication is below 600 feet, and he is confident that he now has oil in large quantity, although it will yet take time, patience and money to develop it.

Canada.

From the Bothwell *Reporter* of the 6th inst., we learn that the wells on the Smallwell, Gordon, McRoberts and Atwell Farms seem to be yielding finely.

Extracting Silver from Lead.

An invention has been provisionally specified for Don Francisco M. del Real, of Bordeaux, the object of which is to extract silver from lead. The lead is run from the reverberatory furnace into a heating pan, under which a strong fire has been previously made, in order that no cooling of the lead may take place, but its temperature may be raised in a short time. The surface of the lead is skimmed, after which he introduces about one part by weight of carbonate of ammonia to 100,000 parts of lead contained in the heating-pan. To introduce the carbonate of ammonia he employs a perforated ladle with a spring lid. This instrument, with the carbonate of ammonia therein, is stirred about in the lead for about five minutes, when it is withdrawn and a similar instrument, containing about one part by weight of sea salt to about 10,000 parts of lead, is introduced into the lead. This instrument is well stirred about in the lead for about ten minutes. If the quantity of silver contained in the lead be very high, then a proportionately greater quantity of sea salt is introduced. The surface of the lead is next skimmed, and the products of this skimming are placed in small heaps ready to be placed, as hereafter described, in a close retort having a condensation chamber, or chambers, connected therewith by suitable passages. After the skimming is completed, about 1 per cent. of zinc is introduced into the remaining lead in an instrument similar to that used for introducing sea salt and carbonate of ammonia. The instrument containing the zinc is well stirred in the lead for about five minutes each time. It is introduced until the desired quantity of zinc has been added to the lead. The fire is then withdrawn from under the heating vessel containing the lead, and the door of the furnace is left open so that the lead may be cooled as quickly as possible. Directly the surface of the lead presents a chrystalline appearance; this chrystallized part is removed and placed in heaps, which are then placed without delay in the retort already referred to. He first places on the bottom of the retort a layer of vegetable charcoal broken into small pieces; upon this the chrystallized matter is placed, which is next covered with a layer of charcoal. The door of the retort is then hermetically closed and a fierce fire made in a furnace under the retort. After maintaining this fire for about two hours, the zinc which was contained in the silver and lead introduced into the retort will be found in the chamber of condensation in connection with the retort in a state of oxide of zinc. When the

distillation is completed, which may be readily ascertained by looking through a door into the condensation chamber, the retort is opened and the product of the second skimming introduced in order to combine it with the silver contained in the retort. The door is then closed for about ten minutes, after which the rich lead is drawn off from the retort into a pot, from which it is taken to be refined. It will be found that all the silver contained in the lead (excepting about 1½ to 2 parts of silver to every 10,000 parts of lead) is found reduced to a small volume, with sufficient lead for its cupellation. Directly the chrystallized matters resulting from the third skimming have been introduced into the retort, the lead remaining in the heating pans or vessels is run off into a reverberatory furnace, where it is kept under the action of a fierce fire for about three hours. It is then drawn off and cast in suitable moulds.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	B. Lawrence, 157 B'way, N. Y.
Amber	300,000	300,000	Greene Co., Penn.	Geo. W. Grove, 276 S. Third, Phil
Albion		300,000	Halifax, Nova Scotia	H W. Nelson, 24 City Ex., Boston
Alps	100,000	250,000	Illinois Central Dist., Col.	J. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000		Colorado	Lem'l Bangs, Boston.
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl., N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Beacon		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock st., Phil.
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannock, Montana	69 Liberty, N. Y.
Bullion Consoli.	300,000	300,000	Summit and Clear Creek., Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col.	J. P. Whitney, 19 Lindall, Boston.
Canadian				A. Call, 7 Phœnix B'l'g, Boston.
Chem. Gold&S. R				64 B'way
Ch. Un. Gold Co.	240,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston.
Chase	5,000	500,000	Colorado	W. E. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5,000 A Famine Riv., C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Ely, 7 Trav'r B'l'g, Boston
Colorado Boston			Colorado	R. C. M'Laughlin, 69 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col.	39 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 35 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrisannee	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
De Lery		10,000,000	Chandiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n
Downieville	300,000	300,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset			Chandiere River, C. E.	F. McJimsey, 59 Wall, N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Callender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila.
Empire Mill & M				O. F. Griffin, San Francisco.
Enriquetta			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. B'g, Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker, 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. E. Jackson, 18 Phe'x B'g, Bos'n
Gilpin				C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E.	W. H. Adams, 19 Broad, N.Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Fustis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum. Highl'd & Mill C. D., Mon	J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. F. Roelfson, 78 & 80 B'way, N Y
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	F. Kemeys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. F. Roelofson, 78 B'way, N. Y.
Halifax				A. Case, 7 Phœnix B'l'g, Boston.
Harmony				Demas Barnes, 21 Park Row.
Her'it'ge Ranch	30,000	300,000	El Dorado, Cal.	
Hope	80,000	2,000,000	G'ld Dirt Lode, Gilp co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	300,000	Clear Creek co., Col.	J. O'Neill, 23 Wm., N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 137 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y
Kent				G. H Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 71 B'way, N. Y.
Liebig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	1,000,000	Colorado	W. R. Lothrop, 172 B'way, N. Y
Massachusetts	250,000	1,200,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x B'l'g, Bos.
Merchants	30,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Bee., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k, Col.	J. B. Randol, N. Y.
Mount Vernon	200,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 23 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills, Greg'y, Col.	A. L. Guerber, 54 Wm. N. Y.
Monte Christo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil.
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & Stan			Calaveras co	606 Mout, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near SantaFe	
New Gregory				W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon D't, Land. co	Nev 10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada.	71 B'way, N. Y.
New York of Col	100,000	1,000,000	Colorado	F. E. Roelfson, 74 B'way, N. Y
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G Min'g	100,000	1,000,000	Colorado	F. E. Rocfolfson, 78 & 80 B'way.
N. Y. & Eldor'do	250,000	2,500,000	Nevada	G. H. Munroe, 109 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y & Reese R			Nevada	New York.
N. Y. & Renfew				2 Murray, N. Y.
N. Y & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. F. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co, Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston.
Ophir	62,500	625,000	on Comstock Lode, Nevada	Moses A. Hopnock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos.	23 Nassau.
Peck				E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip			Buena Vista Dist., Nevada.	15 Nassau, N. Y.
Phila. & Color'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're	200,000	1,000,000	Colorado	W. H. Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Quaker City			Ind't D't. G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Ranche C'k	10,200	1,200,000	Pine Wood Dist., Nevada.	18 Broad, N. Y.
Realito		1,000,000	G'd Hill D., Storey co., Nev.	117 B'way, N. Y.
Reese River Pr'l	100,000	1,000,000	AmadorDist., Laudor Co., Nev	Elijah Alliger, 67 Wall, N. Y.
Renfrew				W. Stockbridge, 74 F'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant, Jr., 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	Humb't Starr, Pr. R. D Humb't co., Nevada	R. S. Miller, 49 William, N. Y.
Silver Wave	300,000	3,000,000	Reese riv., Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'rmlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad, N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y.
Standard	50,000	500,000	Gregory Dist. Col	T. A. Mitchell, 70 B'way, N. Y
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk				Carlos Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stafford				C. E. Jackson, 15 Central, Boston
Tascher	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado.	Wm. E. Parish, 155 B'way, N. Y
Triunfo			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Stevens, N. Y.
University				31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William, 78 & 80 B'way.
Wauba Yuma	600,000	6,000,000	Arizona	35 William, N. Y.
Waddingham	48,000	1,200,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y
Waverley				J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado	25 William, N. Y
Wilson & Cass			Colorado	New York.

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	40,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	50,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	110,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson				65 Wall, N. Y.
King's Hill	10,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	4 Secs. 5 & 26 T., 49 & 50 R. 28 & 29 Marquette co., Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y
Macomb	110,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., B'stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Manhan				40 B'way, N. Y.
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockein, 22 William, N. Y.
Oswegatchie				24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Bond, 78 Cedar, N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y.
Rossie				24 Pine, N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau, N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau, N. Y.
St. Joseph	100,000	1,000,000	St. Francis co., Missouri.	Jas. R. Knapp, 6 Broad, N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange co., N. Y.	E. P. Ackerman, 48 Pine, N. Y.
Sussex	125,000	625,000	Sparta Town, Sus'x co., N. J.	F. H. Stow, 53 Cedar, N. Y.
Walkill			Orange co., N. Y.	W. A. Scott, 11 Wall, N. Y.
Warren			Warren, Gratton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 124 So. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Demmon, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y.
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac	50,000	1,000,000	Humboldt T, Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill, Lander Co. Nev.	71 B'way.
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho.	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bunnock, Montano	55 Liberty street.
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev	49 Liberty street, N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co, Idaho	137 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N.Y.
East Bannock	100,000	250,000	Bannock City, Montano	J. Callender, 49 Ex. P., N. Y.
Empire G. & S	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	San A 90 m s of Austin, Nev	208 South Fourth street, Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st. N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montano	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis, Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way, New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 Bl'wy, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	30,000	600,000	Alturas Co. Idaho	157 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	137 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway, New York
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway, N. Y.
Nevada	100,000	300,000	Mountain Wells, D. Ch. co Nev	323 Walnut street, Phila.
Nevada	120,000	1,200,000	Nevada	E. L. Bolles 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Ione City, Nye Co., Nev	71 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N.	10 Pine street. New York.
New Y'k Dis'ct	50,000	5,000,000	80 m f'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N Y. & Oro Fino	10,000	1,000,000	do. do.	137 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico, On Comstock Lode, Nev.	24 Pine, N. Y.
Ophir				
Pah Ranagat C'l	50,000	5,000,000	Nevada	26 Pine, N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street, New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	30,000	3,000,000	Pine Mount'n Dist. Nev.	F. K. McCulley, 100 Bd'way, N. Y.
Pioneer & Iuskip			Buena Vista Dis., Austin, Nev	15 Nassau street, New York.
Prescott	50,000	2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador, D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten	50,000	500,000	Lander County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario & Carmn	5,244	1,480,000	Sinaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Union v. Humboldt Co. Nev.	L. G. Wilkin, 119 B'way, N. Y.
Silas Wright	60,000	600,000	Amador, D Lander Co. Nev.	18 Wall street, New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock, 62 B'dway, N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T Co	200,000	2,000,000	Alturas Co, Idaho	A. M. Palmer, 19 Broad st., N. Y
Star Hill	20,000	1,000,000	Nevada	155 B'way.
S'th Cl'r Crk			Colorado	Canastota, New York.
Stephenson	500,000	1,000,000	18 m E of Ft. Fillmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	10 Pine, New York.
Sterling City		1,200,000		New York.
Tarshish	12,000	1,200,000	Toryabee Range, Un. D., Nev	H. S. McCollum, 78 B'way, N.Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Trumbo			San Antonio, Lo'wr Cal	San Francisco.
Toiyabee	50,000	5,000,000	Pine W'd, Mu'tn Dis. Nev	J. M. Brown, 157 B'wy, N. Y.
Union & El D'o	100,000	1,000,000	Mogul Silver Mu'tn	40 Park Row.
Upper Missouri		100,000	Montana	107 Broadway.
Vedder	21,000	2,100,000	Amador Dist., Nevada	L. G. Bingham, 80 B'way, N. Y.
Wamba Yuma	600,000	6,000,000	Arizona	35 William street, New York.
War Eagle	50,000	200,000	Owyhee Co. Idaho	G. M. Eldridge, 144 S. 4th, Phil.
Washington	2,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
White Mountain			New Hampshire	111 Broadway, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Adventure,	20,000		Parts of Sections 35, 36, T. 51, N Range 38 W,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000		1226 A in Secs. 6, 7, 18, T. 58, N R 28, W Keweenaw co. Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Bost'n,	20,000		Secs 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000		Del Norte co., California,	15 Wall St., N. Y.
Algomah,	20,000		W½ S. 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gd'yd'l.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A,	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000		NW¼ Sec. 29, T. 57, R. 33, 160 A,	C. P. Dixon, 48 Pine St. N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31 A 160 A,	A. W. Boardman, 35 Court St., Boston.
Atlas,	20,000		NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000		SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Beaver,	20,000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Boston.
Boheman,	20,000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N. Y.
Boston,	20,000			H. W. Warren, 60 City Ex., B'st'n.
Canada,	100,000		Brome co., Canada East,	H. F. Mount, 3 Hanover St., N. Y.
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E¼ Sec. 23, and NE¼ Sec. 23, 440 A.	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W, in Ontonagon co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W. Keewenah Point,	97 State, Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A. Keewenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N. Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W,	J. Stanton, Jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont.	W. A. Cleveland, 191 B'way, N Y.
Copper Hill,			Wisconsin,	Boston.
Ducotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500,000		S. M. May, 326 Walnut St., B'st'n.
Derby,			Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Dorchester,	20,000		800 A.,	31 and 32 City Ex., Boston.
Douglas,	20,000		E¼ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y.
Dudley,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	100,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000		1798 A., Secs. 1, 2, 11, 12, T. 58, N. R. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil
Eureka,	20,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 137 B'way, N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W,	F. K. McCully, 157 B'way, N Y.
Forest City,	20,000		320 A. NE½ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000		¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	100,000		Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y
Garden City,	20,000		SW¼ Sec. 60, N. W. Sec. 59, T. 58, N. R. 31 W,	R. H. Howe, Chicago.
Girard,	20,000		600 A. Sec. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 36, R. 34, W,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 City Ex., B'st'n
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14¼ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston.
Hanover,	20,000			do. do. do. do.
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston.
Henwood,			Michigan,	57 Broadway, N. Y.
Hope,	20,000	50,000	240 acres in T 57, R 32, Kw co	19 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n
Hudson,	20,000		Ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W½ of SW¼ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000		Secs. 25, 30, 36, T. T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000		Part sec. 18, 19 entire, 30, 31,	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000		Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000		680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Min.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000		W½, Sec. 11, NW¼ Sec. 14, T. T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N Y.
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000		SW¼ Sec. 7, T. 50, N.R. 38, W.	J. M. Cooper, Pittsburgh.
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,			Calaveras co.,	606 Mont St., San Francisco
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills, 284 Pearl St., N. Y.
National,	20,000		Sec. 16 T. 50, R. 39, W. 1,088 A	J. M. Cooper, Pittsburgh.
Native,	20,000		Keweenaw Point, Michigan,	
Nashua,	50,000	100,000	320 A. N. Ontonagon,	W. F. Hardy, 27 City Ex., B'st'n.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands,	S. W. J. Webb, 54 Wall St., N. Y.
Nequakett,	20,000		Sec. 26, T. 51, R. 43,	G. S. Frost, Detroit.
New York,	20,000		240 A. SE¼ Sec. 10, E½ NE½ Sec. 15, Baltimore,	H. W. Nelson, 24 City Ex., B'st'n. R. Robarts, 19 Nassau St., N. Y.
New Burra,				W. Bowes, 68 Wall St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	T. H. Belt, Jr. 23 William St. N Y,
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jo, do. do.
New Devon,				17 William St., N. Y.
North Western,	20,000		W½ Secs. 24, 25, 26, E½ Secs 36, 35, T. 58, N R. 31,	J. M. Cooper, Boston and Detroit.
Norwich,	20,000	500,000	Secs. 11, 12, T. 40, N R. 39, W. and other lands, 1,000 A.,	P. C. Blancan, 35 Wall St., N. Y.
Ogema,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 35, W.	G. E. Lellingwell, 7 Pine, N. Y.
Ontonagon,	20,000		631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland,	G. Hart, 11 Pine Street, N. Y.
Ont'n'g'n, Mass.	20,000		Ontonagon,	William D. Williams, Michigan.
Ohiseville,	100,000	500,000	Ohiseville, Orange co., N. Y.,	C. Windsor, 69 Wall St., N. Y.
Penn. Manuf'g.,	20,000	1,000,000	4320 A. Secs. 13, 14, 15, 24, ½ Secs 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	S. M. Day, 326 Walnut St., Phil.
Pewabic,	20,000		W½ Sec. 25, T. 55, N R. 34, W.	C. Emery, 39 State, Boston.
Pitts. & Boston,	20,000		Ts. 58, 57, N. R. 31, 32, W. 12,495 A.	H. A. Johnston, Pittsburgh.
Pontiac,	20,000		SE¼ Sec. 13, T. 55, N. S. 31, W.	C. Emery, Kilbey St., Boston.
Portage Lake,	20,000		Houghton co. Michigan,	22 William St., N. Y.
Prescott,	100,000	1,000,000	Central Arizona,	69 Broadway, N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW½ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20,000		640 A. Sec. 14, T. 58, N. R. 28, W. Keweenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincy,	20,000		Sec. 26, T. 54, N. R. 34, W,	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8,000	200,000		H. Baldwin, 70 Wall St., N. Y.
Reliance,	20,000		Secs. 21, 22, 27, T. 58, N. R. 28, W, 10,785 A.	H. K. Thomas, 11 Wall St., N. Y
Rochester,	200,000	500,000		J. A. Ferguson, 8 Wall St., N. Y.
Ridge,	10,000		Sec. 35, T. 51, R. 38, W,	51 Exchange Place, N. Y.
Rockland,	20,000		Sec. 11, T. 50, R. 39,	S. J. W. Barry, 71 B'way, N.Y.
Resolute,	20,000		1,120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich.,	F. Beck, 45 City Ex., Boston.
St. Mary,	20,000			E. B. Sutton, 43 Pine, N. Y.
St. Margaret,	200,000	1,000,000	Canada,	P. C. Blancan, 35 Wall St., N. Y.
Sharon,	20,000		Ontonagon co. Mich.,	S. J. Edwards, 22 W'm. St., N. Y
Sheldon & Col.,	20,000		SE¼ Sec. 36, T. 55, R. 34 W,	H. W. Nelson, Boston.
South Side,			SE¼ Sec. 34, T. 55, R. 34, W.	Copper Harbor.
Societe Fran'se,	10,000		T. 58, 59, N. R. 28, 30 W,	Carlos Cobb, 22 William St., N Y
Suffolk,	20,000			S. J. W. Barry, 12 Pine St., N. Y
Superior,	20,000		W¼ Sec. 14, T. 50, N R. 39, W.	H. W. Nelson, Boston.
Toltec Consol.,	20,000		Secs. 25, 26, R. 50, R. 36,	A. S. Kellogg, 22 Pine St., N. Y
Union,	20,000	500,000		17 William St., N. Y.
Ural,			Wisconsin,	
Vulcan,	20,000		1,120 A. Secs. 7, 17, 18, T. 58, N R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phila
Victoria,	20,000		Secs. 20, 29, 30, 34, 34, T. 50, R. 39, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20,000		Secs. 17, 18, 19, T. 50, N. R 39, W.	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts,	G. A. Sneden, 12 Pine St., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Wamla Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.

* S, means section; T, township; R, range

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Journal of Mining.
[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

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NEW YORK, SATURDAY, JULY 14.

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WANTED—MORE CAPITAL AND MORE LABOR.

There are thousands of men in this city, and very many more thousands in this and adjoining States, who complain of having nothing to do. At the same time, as we see by our latest exchanges, the Western mining States and Territories are complaining of the scarcity of labor. For instance, the Nevada (Cal.) *Transcript* says:

"There is a great demand for laborers, in this vicinity, at the present time. It is almost impossible to find a man who wants employment, as all seem to have more than they can get through with. Plenty of work here for gardeners, wood-choppers, men to run tunnels, sink shafts, &c., but they can't be had."

And a Virginia City (Montana) exchange states that 500 men could get employment in that district without delay; that

"Ordinary hands get $5; bed-rock men, $6 to $7, and drifters from $9 to $11, with scarcely any to be had for love or money, though posters calling for squads of men numbering from forty downwards, are constantly to be seen in our streets. The demand for labor will steadily increase as the season advances."

Now, why do not the surplus thousands of this side of the continent move westward, fill the void, and thus render some service to themselves, their families, and their country? Money is not absolutely essential to their migration. A little pluck and endurance is all that is needed by men determined to get across the Plains or around the Horn. There are always plenty of chances..... While Montana and California cry aloud for "more labor," Colorado cries out for "more capital." We do not wonder at it. She has been very unfortunate in the possession of great, but inextricable, mineral wealth. Still more so in the erection of the 150 mills that are said to be within her borders, most of which are entirely useless, and represent just so much capital foolishly thrown away. Still more, in a class of superintendents, notoriously incompetent, and who have in many cases lavishly squandered company-money at the gaming table, on champagne, and with the scarlet woman. We have heard of cases where Colorado superintendents were even brazen enough to ask their hardware dealer to charge extra on his bill for "iron," so much for "nails," etc.—requests he dared not refuse, unless he preferred truth and honesty to loss of custom. Colorado, we repeat, has been exceedingly unfortunate in these and other ways; but we believe a happier day is in store for her, and that she will come through the furnace of her afflictions brighter than ever. There is no earthly reason now why capital should not be invested in her mines. Take out ore with it, if nothing else. But it is beginning to be conceded that the Colorado ores are mainly of copper and galena, and that the Swansea process of smelting will save not only the silver and gold, but also the copper and lead. On this principle there are several works now going up in that Territory, and one belonging to Lyon & Co., as is well known, has been in successful operation for some time. The ores have been tried at Swansea, and all their valuable contents extracted. If this can be done there, it can be done in Colorado. Why not? The agent of the great copper smelting firm of Vivian & Sons, of Swansea, telegraphs that he is much pleased with the Lyon smelting works. This, we should think, in connection with the fortnightly results in bullion transmitted to this city, should encourage capital to again seek Colorado as a field of profitable investment.

GUNPOWDER vs. POWDERED GLASS.

We suppose we shall draw rather strongly upon the credulity of the readers of the JOURNAL OF MINING, when we say that gunpowder has been recently so put under control, that a barrel of it thrown on burning materials will smother the fire, and again in two minutes it can be so re-arranged that it will propel a cannon ball with undiminished force. The gunpowder is rendered innocuous by admixture with glass crushed to an inpalpable powder, which can again be rapidly separated from the gunpowder by sifting. Several experiments had been tried with it, such as inserting red hot irons in the prepared powder and throwing it in shovelfuls on a fire, but the London *Times* of June 23d, gives an account of an experiment on a grand scale, which seems to be conclusive as to the value of the invention. The government commission had 338 barrels filled with five tons of gunpowder, mixed with twenty tons of Mr. Gales' powdered glass, and placed in a condemned martello tower, between Hastings and Rye. A charge of pure gunpowder was put into the barrels and an attempt made to explode them by electricity. The charge of pure gunpowder exploded, blowing out the ends of the barrels and scattering some of the contents; but on entering the tower no further damage was found, and the gunpowder treated with glass was cooling down. A pile of fire-wood was then laid on the loose modern floor near the gunpowder, and as the barrels containing the powder burned, the contents, falling on the fire, smothered it, burning towards the edges, however, like a bad port-fire. Two barrels of the mixture were then placed on a pile of blazing faggots, and as they burned and burst, the gunpowder, falling on the fire, rather deadened the flames; while in the tower the fire had by this time gradually died out, leaving a great part of the gunpowder unconsumed. The advantages of this process are manifest.

NOMENCLATURE OF MINING DISTRICTS.

If American miners were to be judged by the nomenclature prevalent in our mining districts, what singular notions concerning them would enter the minds of people who have never seen a mining camp, or shaken the horny hand of a miner! To those of us who have worked or travelled in those regions, "Hangtown," "Red Dog," "You Bet," "Hell Hollow," "Bloody Run," "Gouge-Eye," "Devil's Gate," "Ague Flat," and "Death's Canon," are time-honored and familiar names, but with the generality of mankind, how different! Of these, few could read of "Small Pox Creek," "Hell's Mouth," "Shirt-Tail Canon," "Death's Ravine," or "Murderer's Gulch," without at least a slightly unpleasant feeling, yet such are the names which some of our hardy pioneers will hand down to posterity. Some of these days, mayhap, we shall be honored with a note of invitation from Sodom, or for a pleasure trip to Pithole. The names given to places and things, to a certain extent, display national peculiarities. The Indian generally gives a name derived from some natural or poetic similitude; the Norwegian has no new lands, but names his ships "*Min Fader's Minde*" (My Father's Memory), or some other name suggestive of family affection; the Englishman or Eastern States man is apt to call his estate or ship by his own name or that of some respected friend; and the Frenchman or Spaniard will call them by the name of his patron Saint, or some other object of reverence, as San Francisco, Santa Clara, or St. Marie. In like manner, the names adopted in the mining regions of this country indicate the devil-may-care character of our Western pioneers. Such names are in the highest degree descriptive—repulsively so, perhaps, in many cases. "French Camp," "Lost Canon," and a hundred others that we might mention—each contains its own peculiar legend in its name. But this is the only advantage. Wherefore it is to be hoped that, as time rolls on, some of these names will be supplied by better ones, even as "Hangtown" has been changed to "Placerville."

Screw Amalgamator.

Another new Amalgamator has been introduced. It is on the screw principle. A screw, with say three or four flanges, with shoes attached, enclosed in a cylinder, is fixed vertically in a pan sloping inwards at the bottom. The circumference of the pan between the cylinder and its sides, is divided by four inclined partitions sloping from the top of the cylinder to the lower part of the pan, and between each is an opening in the cylinder. When the screw is rotated the pulp of crushed quartz and quicksilver passes into the cylinder down the threads through the holes in the cylinder, up the inclined planes back into the cylinder, and so on. If the motion of the screw is reversed, the mass of pulp and quicksilver is forced upward through the cylinder, from every point of which it is discharged in a spray, falling down the sides of the pan and partition, and then raised again in the same manner by the screw. By this constant working it is claimed that the quicksilver comes in contact with, and secures, every particle of the precious metals.

The Value of Anthracite Acknowledged.

The British iron masters have discovered the value of anthracite coal. They had not hitherto been able to use it. But now Mr. J. H. Blackwell, of South Wales, reports that he has even surpassed our countrymen, being able to make a ton of No. 2

and 3 pigs, with something less than a ton of anthracite—the previous method requring three tons of coal—while we have been in the habit of using two tons of anthracite. This is the latest and most signal refutation of that portion of the British ex-Chancellor's recent statement before Parliament, that the coal of the United States possesses so much anthracite that it is not fit for smelting purposes.

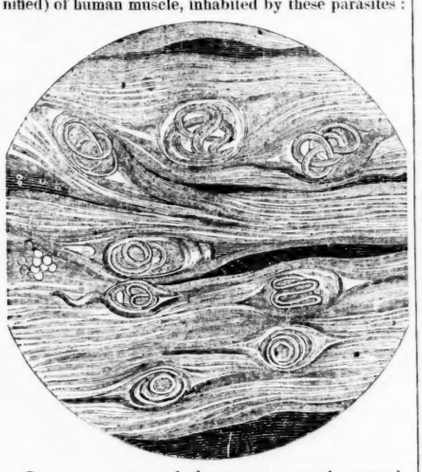
New Coaling Station.

Anthracite and bituminous coal have both been recently found in large quantity at the Falkland Islands, and the British Government—quick to appreciate the immense value of such deposits, and mindful of the lesson suggested by the Spaniards in the seizure of the Peruvian guano islands—intends to erect strong fortifications there. If prevailing expectations are realized, the Falklands will be a very important coaling station for the mercantile marine, as well as for vessels of war—a sort of half-way house, as it were, for steamers voyaging around the Horn.

Scientific Meetings.

SOCIETY FOR THE ADVANCEMENT OF SCIENCE AND THE ARTS.

Monday evening there was quite an interesting *conversazione* at the Society's rooms, relative to trichinæ and other animalculæ. Miners are perhaps more liable to attack from trichinæ than any other persons, because ham, bacon and salt pork are more generally used by them than any others—particularly in the far West—and because they often eat their meat only half cooked. For their especial benefit, then, we give the following engraving of a small speck (magnified) of human muscle, inhabited by these parasites:



Dr. ——— opened the *conversazione* by remarking that the reason why sickness and death from the attacks of trichinæ are not as common in the States as in Germany, is probably this: that the pork used here is more thoroughly cooked. Two persons might take a slice from the same ham, and the one die from trichinæ and the other suffer no ill effects. Trichinæ were all through that ham; but in the outside part, which was thoroughly cooked, they had been destroyed by the heat—in the inside the cooking had not been sufficient to kill them. It is, therefore, of the greatest consequence that meat should not be eaten in an under cooked state. There might be no trichinæ in the meat, but we could never be certain of it. The first symptom of sickness from this cause is diarrhœa; the insects then eat through the coat of the stomach and into the muscles, producing intense pain in the muscles of the arms, etc. These internal enemies are not the only ones we have to contend against, but many sores and sicknesses are occasioned by the attacks of animalculæ, which deposit their eggs on the outer skin of our bodies, and some are of opinion that a great number of our ordinary sicknesses are the effects of the attacks of animalculæ. Mr. Fisher observed that, with respect to cooking, meat was much more thoroughly cooked in Italy than with us. He also noticed the manufacture of wine, and considered that the sourness of wine containing a small quantity only of alcohol, was probably to be attributed to the generation of animalculæ therein by the warmth. The liquor should be kept, as is often the case, in caves which have been excavated by the gradual taking out of building stone, and which being formed in the inner depth of the mountain preserve an even and cool temperature; that here the liquor keeps well and does not spoil, and also that if it is submitted to a certain degree of fire heat, something short of boiling-point, its flavor is not damaged, while it may, after this process, be put into a warm room or sunny garret, and remain unspoiled, probably, because the fire-heat which was applied had destroyed the ammalculæ contained therein. Several gentlemen remarked that they had found this to be the case with respect to cider. Dr. Giscom called attention to the state of the Croton water. He had lately observed that the water was discolored. Examining it more closely he found there were countless specs of thread-like substances, which, he concluded, were animaculæ, and which he was preparing to examine microscopically. But whatever these were, there were other animalculæ plainly enough to be seen sporting about in the water, and he considered them conducive to disease. A glass of water being obtained from the service-pipe, he examined it, and stated that he found them in that also, and in all the water he had examined throughout the city. The Secretary observed that he had been speaking with Mr. Craven on the subject that day, and that Mr. C. told him they had been supplying water from reservoirs which were unusually low, and which consequently might be less pure than ordinary. Dr. Giscom thought the water might be purified by using domestic filters. Dr. —— thought that only boiling would get rid of the animal life.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

COAL.—No. Two.

Editor Journal of Mining:

Sir:—In looking at the present state of the coal trade we can admit, as Mr. Gladstone says, that the British are foremost in the race, for no country has developed its mineral resources more fully. There are more than 300,000 miners employed in the British mines, and the amount of coal which they annually extract, is about 70,000,000 tons. If 70,000,000 tons of coal were excavated from a mining gallery five feet high and one hundred feet wide, the gallery would be no less than five hundred miles in length. There are grounds for supposing that the annual produce of the coal fields of the world, does not at present greatly exceed 100,000,000 tons, and therefore the British contribute nearly seven-tenths of the total of the earth's coal produce. With respect to the miners themselves, up to 1599, the mining population of Scotland were slaves. Merely by engaging themselves to work in a mine, they were bound to the perpetual service thereof, and when the mine was sold, they were sold along with it. In England, the mining population was formerly noted for being rude and savage. Of late years, however wonderful changes have been made. They can boast of reading-rooms, libraries, and mechanics institutions that are a credit to any class of the community. But though we admit these facts, Mr. Gladstone would carry the Americans back half a century, when their anthracite coal was of no commercial value; but were he to make himself acquainted with American statistics, he would find that in those very beds, miners are employed in thousands, and the produce of the mines is computed by millions of tons—and what may we expect when our mines are developed? The cheap production of English coal arises more from the scientific skill of their mining engineers, than from any other cause. Their railways being short, they are made almost on a level, and nearly all are furnished with double tracks. They have the most approved machinery in use for drawing the coal from the mines, and their horse-roads radiate into different parts of the mine, so that they are able to keep all in motion. Expedition is the chief principle in all their arrangements. I have seen from a single shaft of one hundred fathoms deep, about one thousand tons of coal or more drawn out each day. A Miner.

Shawmut, Elk Co., Penn.

Original Papers.

[Prepared for the Journal of Mining.]

GEOLOGICAL SCALE OF COAL.

By Dr. R. P. Stevens.

Rock.	Geological Age.	Localities.
Tertiary	Cainozoic..	Bellingham Bay, Washington Ter., Yellow Stone and Missouri Rivers, British Possessions, Montana Ter., Dakotah Ter., Texas, South Carolina, Central America, Greenland.
Cretaceous	"	Mt. Diabolo (California), Texas, Kanzas, Nebraska Ter., New Jersey.
Jurassic	Mesozoic..	Richmond (Va.), China, Japan, Scotland, England.
Permian	Paleozoic.	Deep River (N. C.)
Carboniferous .	"	New Mexico, Colorado Ter., Utah Ter., Texas, Arkanzas, Kanzas, Missouri, Minnesota, ? Iowa, Michigan, Illinois, Indiana, Ohio, Kentucky, Tennessee, Alabama, Georgia, Virginia, Maryland, West Virginia, Pennsylvania, New Brunswick, Nova Scotia, Newfoundland.
Devonian	"	Virginia, Pennsylvania, Maryland.
Silurian.....	"	Portugal.

[Written for the Journal of Mining.]

SALT—Number Eight.

By Francis E. Engelhardt, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

When the rainwater, during its passage through the surface formations of the earth, and before it issues again as a spring, comes in contact with beds of rock salt, or rocks impregnated therewith, it dissolves them more or less, according to the time it is in contact with the salt. Frequently the presence of salt in a spring is indicated by the plants which grow in its immediate neighborhood. These plants contain, as one of their chemical constituents, salts of soda in considerable quantities. Hence they are called salt plants. At Syracuse, in this State, we find, especially two—the salicornia herbacea, L., belonging to the natural family of the chenopodia, and the triglochin maritimum, L., belonging to the juncaceæ. In connection with these salt plants, it may be stated that up to the beginning of this century, all the soda ash of commerce was produced from the ashes of salt plants. Great Britain employed for the manufacture of its "kelp" the sea-weed genus fucus, etc., which grow so abundantly on the Irish and Scotch coasts; while on the continent, especially in Spain, the salsola kali, L., salsola soda, L., salsola sativa, L., and the salsola tamariscifolia, L., belonging to the natural family of the chenopodiaceæ, and a great number of other species, were used in the manufacture of barilla ash. During the wars of the French Republic with Spain, when the importation of that article was suspended, the French Government called on the chemists of the country to devise a plan for the artificial manufacture of soda ash. The best method, and the one even yet employed with very little modification, was that of the celebrated chemist, Leblanc, who manufactured it from salt and sulphuric acid. Since that time large quantities of salt have been annually used in the production of this ash. Wells containing salt, as already stated in a former number, are found in nearly every formation. Moreover, they occur in almost every country. In some places their number is very great—as, for instance, in Transylvania—where there are one hundred and twenty of these wells. In China they are also very numerous, and especially remarkable for their great depth. To enumerate all the wells from which salt is at present manufactured, would be nearly impossible, and I shall therefore only speak of those in the United States. The most productive salt works in this country are in our own State, near the city of Syracuse, Onondaga county, in the silurean formation. It is stated that the first white man who visited them was the French Jesuit Father, Lallemant. Another Jesuit Father, Le Moynes, is the first who mentions them in his writings (1653). The Indians must have known

them a long time previously, since the use of salt was common among the Delawares in 1770. The whites made a treaty with the Indians in 1780, according to which the salt wells were to be the common property of the State of New York and the Onondagas. In the same year the first salt was manufactured by the whites. In the year 1795 a fresh treaty was made—the Indians selling their interest in the land and wells for certain annuities, and one hundred and fifty bushels of salt annually. Since 1797 the State has had the control of the wells and land. This latter is eight miles long and from one-half to three miles wide, including the sweet-water lake, Onondaga, which is five miles long and one mile wide. That portion of the land which has not been found adapted to the manufacture of salt, has been sold by the State, with the condition that the salt wells which may be found therein shall be the property of the State. The production in 1860 was 5,593,447 bushels, and in 1862, 9,053,874 bushels. At Montezuma, in this State, are also salt wells, but I am unacquainted with their production. In Pennsylvania, we meet with a salt region along the Alleghany, Hiskiminetas and Beaver Rivers, in the carboniferous series. The first well was bored in 1812, to a depth of two hundred feet. The production of salt in Pennsylvania, which in 1850 was 919,100 bushels, had fallen off in 1860 to 450,000 bushels. Virginia possesses two salt regions—one on the great Kanawha river and the second in Washington and Smyth counties, on the Holston river. Of the Kanawha wells some are 1,500 feet deep, giving out large quantities of carburetted hydrogen gas. I will briefly state the process of manufacture, as it differs somewhat from that usually practiced elsewhere: The brine is evaporated first, in long sectional tanks with cast iron bottoms and wooden sides. When reduced to nearly a saturated state it is conducted into a series of crystallizing pans, heated by steam pipes. The production of salt amounts to about 3,000,000 bushels. The Holston wells are five in number, but very rarely more than two are worked. The brine is 23 per cent. They are between two and three hundred feet deep, by four inches in diameter. It is stated that the brine of these wells is entirely free from the chlorides of calcium and magnesium, as also from oxide of iron, yielding consequently a very dry and white salt. The entire production of Virginia in 1860 was 3,650,000 bushels.

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. Four.

SMALL-POX CREEK DIGGINGS.

By J. Vancleve Phillips.

This is six miles south of Galena. Indians were encamped here at one time in large numbers. The small-pox getting among them, they tried, as a remedy, cold bathing in a small clear creek, and many died; the creek thereupon received the above ominous name. Along this creek, in a low escapement of limestone, vertical fissures are seen. In these the Indians had found lead ore, and mined a considerable quantity in their rude way; the ore was in solid veins in the limestone; the surface of the veins had been gouged out with knives, and when the ores became pinched in the rock, fires were built on the place, and the rock having become well heated, water was thrown on, causing it to split; then rock and ore were separated with some rude instrument. In this way veins had been followed several feet in the solid rock; small rock furnaces were found near, where the ore had been reduced to metal. When the country was occupied by the white race, the lead miner here found mines ready to work; powder was used; and these small veins followed down to water, which was about twenty feet from the surface. At the foot of this bluff, in the clay along the bottom, a considerable quantity of floating ore was mined at a depth of ten and twelve feet from the surface; the water level being reached at that depth, the place was in consequence abandoned in 1845. I learn that a pump was afterward put up here, and the ores worked under the creek, and a large amount raised. This ore occurs in the lower galena limestone, in a system of irregular, pipe, stratified, and gash veins. At several other points up and down the creek, ore has been mined in veins of a similar character; these places have been worked down a few feet in the water and then abandoned. Lower down the creek, the ores had been found in pipe veins, under high bluffs of limestone, the veins being near the water level and passing nearly horizontal in the ridges. North, half a mile from the first-named discovery, is the noted Marsden's mine, and lower down this stream the recently-discovered new California mines, where the ore is found at the foot of steep bluffs of limestone, and below the high water mark of the Mississippi river. Twelve miles from Galena is the "Twelve-mile House." The road follows a dividing ridge, and the country is rolling prairie; for several miles from town, fine country seats and highly cultivated grounds are seen. Then the Four-mile House, a village of a few frame buildings. Six miles farther, fine farms lining the road on each side, the village of Hazel Green is reached. Here is seen about the first mining along the road, the deep clay on the ridge being perforated with numerous prospecting shafts, and ore, in east and west and north and south veins, is worked at the entrance of the village. Substantial brick stores, wagon shops, churches, and white frame dwellings are passed for about a mile on each side of the road. These make up the town, which has a population of two thousand people. The ridge east of the town is filled with shallow holes from which lead ore has been raised; following down a valley, a clear spring branch is seen, and an adit level is being run to drain this ridge. We shall not stop here to discuss whether this is the most feasible and economical way to get lead ore, but pass on one mile and come to Curtis's Grove—a beautiful hickory grove on this ridge, named from one of the early settlers. Here are extensive lead mines. One mile farther, and we reach the Twelve-mile House. This is a country tavern, and was a noted stopping-place for teams when large quantities of lead were hauled from Mineral Point to Galena, prior to the building of the Mineral Point Railroad. Here we are on the centre of a wide rolling ridge, praries stretching away on either hand, west, north, and east. The Sinsinawa, Platte, and Scales, mammillary-formed mounds, rise, like paps, from the great breast of nature. Those are distant ten and twenty miles, and were the great landmarks for the Indian and early explorer, who traversed these wide-spreading prairie regions. We are here coming towards the central part of the great lead field of the Upper Mississippi. To the east, five and ten miles, are the lead mines around the villages of Benton, New Diggings, and Shellsburg; west, the mines on the Sinsinawa and Fairplay; south, the mines about the village of Hazel Green and Curtis's Grove; towards the north, the "big patch," and the Platteville mines. We here see linear heaps of ochery earth and limestone, running north and south, and east and west. These show the direction of fissures from which gash veins of lead ore have been worked. Some pumping by horse power has been done; the veins stand vertically in the crevices, and are confined to the upper galena limestone. What was known as the Rountree and Sawyer vein was an east and west gash vein; it was discovered "crossing" a ravine, where the float-ore was thrown out to the grass roots. This ore stood in a vertical vein, between wall-rocks of limestone, and was worked down sixty feet, yielding a large amount of ore; an engine and pumps were then put up, and a shaft sunk one hundred and twenty feet deep—very large ore being found; this was in 1847. Ore at that time being low, and the water strong at this depth, the mine was abandoned. Another small engine was worked on a parallel vein near by, and a considerable amount of ore raised last year. This ground is too heavy to be worked by individual enterprise. Capital can be used to great advantage in this district; but before the spot be selected for machinery, the discoveries should be thoroughly examined and mapped out, and the area to be drained opened by shafts down to the water, so that when the pump shaft is sunk, and drawing from parallel crevices commences, a force of miners can be at once set to work following the ores. The efforts made, up to the present time, by mining parties, to work ores in the water by steam power, have been random shots by parties who have more money than practical knowledge of the lead veins, and those enterprises have failed not so much for the want of ore, as of a systematized economical system of mining, and sufficient capital to take advantage of all the ground drained. The time is close at hand when there must be a large amount of capital and active energy seeking lead mining. The large amount of lead we now import, and its high price on the one hand, and the easy access of all parts of this lead-field by railroad, and the accumulating evidence respecting the character of the veins, tend to make the business each year better understood, and will offer such inducements that capital will as naturally seek investments in lead lands and lead mining as in coal or iron, and with equal or greater success. As a general thing, the risk in mining is somewhat proportionate to the fineness of the minerals and metals, commencing with coal, iron, lead, copper, silver, and gold. Numerous lead veins have been worked in this district, all being gash veins, and in north and south and east and west crevices.

MARKET REVIEW.

FRIDAY EVENING.

Gold.—The price at two o'clock this P.M. was 153⅜, the market being steady and business brisk. Foreign exchange is firm; bills on London at 60 days 107¾ to 108¼ for commercial, and 109¼@109½ for bankers'; at short sight, 110¾@111. On Paris at 60 days, 5f 15@5f 08¾.

The loan market is easy at 5 per cent., with somewhat less demand. There have been a few transactions at 4 and some at 6. In government stocks there is less activity, also in railroad shares.

In mining stocks we notice that Crown Point (Nevada) has fallen from $800 to $700 per foot. Yellow Jacket from $700 to $575. Belcher from $180 to $160 per foot. Consolidated Gregory has fallen during the week from $20 40 to $19 50. New York has reached $1 25, and Quartz Hill has fallen from $4 75 to $4 10.

In petroleum stocks, Bennehoff Run has fallen from $11 40 to $9 70, and United States, from $8 20 has reached $8 60.

The metal market has been quiet but firm. It remains to be seen what effect will be produced by the postponement, until December, of the consideration of the Tariff.

Iron.—The price has been firm, and we note sales of about 1,000 tons American at $48 for No. 1, and $45 for No. 2. There is still a great scarcity of supply. Scotch Pig is also firm; Glengarnock $48; 500 tons, to arrive, at $47; Eglinton $47; Gartsherea $50; Coltness, $49@$50. In Rails, 3,000 tons American, $80; 2,000 tons Welch $55, gold. Bar iron unchanged.

IMPORTS FROM JANUARY 1 TO JULY 1.

	Bar.	Pig.	Sheet.
From foreign ports,	12,843 tons.	31,123 tons.	272,999 bundles.
Coastwise,	1,282 "	1,425 "	22,027 "
	14,125	32,448	295,026
Same time 1865,	4,214	7,063	75,046
Increase in 1866,	9,911 tons.	25,385 tons.	219,980 bundles.

Copper—Has been steady, with a speculative demand, in view of the proposed tariff changes. Sales include 250,000 lbs. Portage Lake at 33c.; 200,000 lbs. Baltimore 32½@33c.; 200,000 lbs. Detroit 33@33½c.

Lead—Has been steady, with an upward tendency. Sales at 7⅛@7¼c., gold. The stock at the German ports is trifling, and the stock here is also small. The imports this year have been 251,500 pigs, against 69,500 pigs to same time last year.

Spelter—Is firmer, with considerable activity. Sales of 500 tons at 7c¼. for Silesian; 7⅛@7⅜c. for Bleyberg and Stolberg, gold, and 12½c. for Lehigh, currency.

Zinc.—Mosselman is steady. Sales of 163 casks, 9½c, from agents' hands.

Tin—Tin is firm, with little doing, however.

Salt—Quiet but firm. Sales of 2,000 sacks Ashton's Liverpool fine at $2 75 gold.

Coal.—Foreign continues very scarce. Cargo sales of Little Glace Bay at $8 87½ for cash. The trade, according to the Pottsville *Miners' Journal*, sums up this week as follows as compared with last year:

	1865.		1866.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	INC. DEC.
P. & R. R. R.	43,632	1,256,817	72,681	1,914,480	657,663
Schuyl. Can.	18,735	241,43	35,598	596,533	355,390
L. Val. R. R.	13,292	644,160	45,858	897,950	253,781
Lehigh Cap.	29,875	241,522	37,604	367,221	125,499
Scranton Sth.	19,904	429,294	23,599	502,461	73,167
" North.	6,941	115,111	10,258	197,786	82,675
Penn. C. C.					
By R. Road.		118,179		132,152	13,973
By Canal.		7,873		16,181	8,308
Del & Hudson.	33,118	299,843	45,750	513,228	213,384
Wy'mg south.				165,391	165,391
" North.				12,248	12,248
Shamokin.	12,957	161,575	18,734	254,644	93,070
Treverton.	378	11,219	1,390	23,589	12,370
Short Mt.		7,501	3,175	29,767	22,216
Franklin.		12,536	2,221	22,850	10,314
Broadtop		113,954		125,954	11,975
	179,132	3,660,927	296,848	5,782,435	
			179,132	3,660,927	
			117,716	2,121,508	

Petroleum.—We note a sudden decline for both crude and bonded. Crude was nominal at 22c.; bonded irregular at 31c.@35c. for standard white, and 36½c.@37c. for prime light straw to white.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

ANTIMONY	Regulus, ₱ lb	$00 14	@$ 00 15
	Crude	.. ..	.. ..
BORAX		.. 34	.. ..
BRIMSTONE		67 50	72 50
COPPER	Ingot, Lake Superior, ₱ lb., cash	.. 33	.. 33½
	Baltimore	.. 32⅔	.. 33
	Pig Chili	.. ..	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 45	.. ..
	Yellow metal	.. 33	.. ..
IRON—Pig	No. 1 Scotch, ₱ ton	46 00	48 00
	No. 1 American	46 00	48 00
	No. 2 "	.. ..	.. ..
	No. 2 Charcoal	.. ..	.. ..
Bar	Swedish, ordinary sizes	170 00	.. ..
	Amer. and Eng refined	125 00	145 00
	" " common	115 00	120 00
	Rails, American currency	.. ..	.. ..
	" English gold	.. ..	.. ..
	Horse shoe iron	150 00	160 00
	Rods 5-8@3-16rd. and sq	130 50	185 00
	Band	155 00	.. ..
	Nail rods, 5-8 and 3-16	122 50	185 00
	Hoops	160 00	225 00
Sheets, Russian, ₱ lb		.. 28	.. 30
	English "	.. 6¼	.. 9
	American "	.. 25	.. 25¼
Boiler Plates, English		.. ..	.. ..
	American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 26	.. ..
	Best sheet cast, "	.. 26	.. ..
	Best cast circular saw plates 46 in	.. 32	.. ..
	Double shear steel, war	.. 26	.. ..
	Single " " "	.. 23	.. ..
	Montague & Co. C. S., in bars	.. 23	.. ..
	Round machinery cast	.. 17	.. ..
	Best German	.. 17	.. ..
	Government German	.. 14	.. ..
	Eagle German	.. 16	.. ..
	(L.) Blister, war	.. 22	.. ..
	W. Jessop & Sons, blister, war	.. 20	.. ..
	Double refined	.. 28	.. ..
	Stone Axe shapes	.. 28	.. ..
	Common blister	.. 16	.. ..
	2d quality sheet	.. 23	.. ..
	3d quality sheet	.. 20	.. ..
LEAD	American, per 100 lbs	.. ..	.. ..
	German, Gold	7 25	7 50
	Spanish, "	7 25	7 50
	English, "	7 25	7 50
	Bar, per 100 lbs	11 50	.. ..
	Pipe and sheet	11 44	.. ..
TIN	Banca Gov., per 100 lbs. gold	19½	20
	Straits	18⅝	19
	English	.. ..	19½
TIN PLATES	IC 10-14 prime charcoal	15 50	.. ..
	IX 10-14 " "	18 50	.. ..
	IC 12-12 " "	16 00	.. ..
	IX 12-12 " "	19 00	.. ..
	IC 14-20 " "	16 50	.. ..
	IX 14-20 " "	19 50	.. ..
	IC 14-20 Roofing ch. 1st	14 75	.. ..
	IC 14-20 " " 2d	13 75	.. ..
	IC 14-20 " Coke	12 25	.. ..
	IC 10-14 Coke	12 00	14 50
SPELTER	Lehigh, per lb., currency	.. 12½	.. ..
	Foreign " gold	.. 7¼	.. 7½
ZINC	Mussulman & Amer. gold	.. 9½	.. ..
SOLDER	No. 1	.. 24	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. 80	.. ..

LONDON METAL MARKET.

London, June 22, 1866.

		£.	s.	d.		£.	s.	d.
COPPER	Best selected, per ton	89	0	0	@	..	..	..
	Tough Cake & Tile, per ton	86	0	0		..	..	..
	Burra Burra " "	90	0	0		..	..	..
	Copper wire, per lb	0	0	11¾		..	..	..
	" tubes, " "	0	0	12¼		..	..	..
	Sheathing & Bolts, per ton	91	0	0		..	..	..
	Bottoms " "	96	0	0		..	..	..
	Old (Exchange)	77	0	0		..	..	..
IRON	Bars Welsh in London	7	2	6		8	5	0
	Do. to arrive	7	0	0		7	5	0
	Nail rods	8	5	6		9	5	0
	Do. Stafford in London	8	10	6		8	17	6
	Bars " "	8	10	6		10	0	0
	Hoops " "	9	10	6		10	10	0
	Sheets, single	10	0	0		11	0	0
	Pig No. 1 in Wales	4	5	0		4	10	0
	Refined Metal, do.	4	0	0		5	0	0
	Bars Common do.	6	5	0		6	10	0
	Do. Merch. Tyne or Tees	7	10	0		..	..	..
	Do. Railway in Wales	6	0	0		6	5	0
	Do. Swede in London	10	10	0		11	0	0
	To arrive	11	0	0		..	..	..
	Pig No. 1 in Clyde	2	13	0		2	18	0
	Do. f. o. b. Tyne or Tees	2	9	6		..	..	..
	Do. Nos. 3, 4, f. o. b. Do.	2	6	6		2	7	6
	Railway Chairs	5	10	0		5	15	0
	Do. Spikes	11	0	0		12	0	0
LEAD	English Pig Common	20	0	0		20	5	0
	Do. ordinary soft	21	0	0		21	5	0
	Do. (W. B.)	22	10	0		..	..	..
	Do. Sheet	21	10	0		21	15	0
	Do. Red Lead	23	10	0		24	0	0
	Do. White	27	0	0		30	0	0
	Do. Patent Shot	20	0	0		..	..	..
	Spanish	20	5	0		20	10	0
STEEL	Swedish in kegs, rolled, p ton	13	0	0		14	0	0
	Do. hammered	15	0	0		16	0	0
	Do. in faggots	16	0	0		16	10	0
	English Spring	19	0	0		23	0	0
QUICKSILVER	Per bottle	7	0	0		..	..	..
SPELTER	Foreign, per ton	25	0	0		..	..	..
	To arrive " "	25	0	0		..	..	..
ZINC	In Sheets	30	0	0		..	..	..
TIN	English Blocks	85	0	0		..	..	..
	Do. bars in barrels	86	0	0		..	..	..
	Do. refined	88	0	0		..	..	..
	Banca	78	0	0		..	..	..
	Straits	75	0	0		..	..	..
TIN PLATES*	IC Charcoal, 1st qu., per box	1	10	0		..	..	..
	IX Do., 1st quality "	1	16	0		..	..	..
	IC Do., 2d quality "	1	8	0		..	..	..
	IX Do., 2d quality "	1	14	0		..	..	..
	IC Coke	1	4	0		..	..	..
	IX Do.	1	10	0		..	..	..
	Canada Plates, per ton	13	10	0		..	..	..

In London; 20s. less at the works.

YELLOW METAL	Sheathing, p lb	0 0 8½	.. .. ..
	Sheets, per lb	0 0 8½	.. .. ..
INDIAN CHARCOAL	Pigs, in London	7 0 0	7 10 0

* At the works. 1s.@1s. 6d. less.

SALES OF ORES IN ENGLAND.

LEAD ORES

DATE.	MINES.	TONS.	AMOUNT.	PURCHASERS.
June 18—	Dylife	44	£12 0 6	Walker, Parker & Co.
	SOLD AT LIVERPOOL, from the LINARES MINES.			
May 23—	Lot 1 (ex *Mail*)	57	13 3 6	Panther Co.
	—Lot 2 (ex *Thomas*)	31	13 15 0	ditto.
June 21—	Lot 1 (ex *Orkney*)	63	13 0 0	Panther Co.
	—Lot 2 ditto	63	12 10 6	Walker, Parker & Co.
	—Lot 3 ditto	64	12 10 6	ditto.

BLACK TIN.

DATE.	MINES.	TONS.	C.	Q.	LBS.	P. PER T.	AMOUNT.
June 14—	Great Wh. Vor	70	9	0	2	—	£3,365 2 2
16—	Penhalls	6	13	1	1	—	302 6 7

COPPER ORES.

SOLD AT THE ROYAL HOTEL, TRURO, JUNE 21.

TOTAL PRODUCE.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
Dev. Con's	1,790	£7 448 4 0	Wheal Creluke	80	£273 0 0
M'ke Valley	427	1,539 7 6	Wt. Maria & For.	50	97 14 0
E. Car'n	330	1 116 11 0	No. W. Robert	35	101 10 0
Brookwood	290	1,093 0 6	Wheal Edward	29	73 4 6
W. Fr'nd'p	158	945 13 0	Southridge Con's	28	100 5 0
B'd United	123	524 2 6	Hawkmoor	24	73 16 0
G'Fke. (Cht.)	106	380 14 0			

Average standard, £108 4 0; average produce, 6¼; average price per ton, £3 19 0; quantity of ore, 3,460 tons; quantity of fine copper, 214 tons 9 cwts.; amount of money, £13,687 2 0.

Previous sale.—Average standard, £105 6 0; average produce, 6⅜. Standard of corresponding sale last month, £104; produce, 6⅞.

BY WHOM PURCHASED:

NAMES.	TONS.	AMOUNT.
Vivian & Sons	589½	£2,294 8 0
Freeman & Co	230½	1,010 18 0
Greenfell & Sons	306	1,891 2 6
Sims, Willyams & Co	534½	1,607 9 6
Williams, Foster & Co	652½	2,670 3 6
Mason & Elkington	181½	649 18 0
Bankart & Sons	272	1,025 16 0
Copper Miners' Company	256	1,027 9 0
Charles Lambert	35	101 10 0
Newton, Keates & Co	129	561 3 0
Penclawdd Copper Co	18	67 1 0
Hadland & Co	264½	780 3 6
Total	3,460	£13,687 2 0

SAN FRANCISCO STOCK MARKET.

LATEST BY MAIL.

NAME.	FRIDAY, June 15. Open'g	Clos'g	Sales for week Ending June 15. Shares.	Amount.
Sierra Nevada	.....	.....	354	$ 1,481 00
Imperial	$117½	$111	384	44,256 00
Gould & Curry	.....	.....	8	6,085 00
Chollar—Potosi	197	202	456	60,795 00
Yellow Jacket	675	695	95	70,327 00
Bullion	60	60	169	27,992 00
Crown Point	.....	.....	.....	.....
Belcher	190	192	51	8,877 00
Overman	28	28	272	7,082 00
Ophir	340	352	199	62,974 00
Hale & Norcross	960	960	57	53,178 00
Exchequer	.....	.....	.....	.....
Savage	990	1030	30	29,125 00
Empire Mill	.....	.....	10	1,305 00
Alpha	275	275	20	6,387 00
Lady Bryan	2½	2½	460	1,054 00
Daney	.....	.....	10	80 00
Confidence	32½	30¾	420	12,114 00
Baltimore Amer.	.....	.....	.....	.....
Central No. 2	.....	.....	.....	.....
Kentucky Cop. Co	.....	.....	.....	.....
Golden Rule	16	16	50	795 00

LATEST BY TELEGRAPH.

SAN FRANCISCO, July 11.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	725	Crown Point	700
Savage	900	Yellow Jacket	575
Chollar-Potosi	185	Belcher	160
Ophir	235	Alpha	.....
Hale and Norcross	1300	Imperial per share	100

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

55,995. QUARTZ MILL.—John T. Bonnell, Columbia, Cal.:

I claim the drum, C, provided with ratchets, D. D, and a pendant rod, A, with a weight or bob, o, attached, in combination with the spur-wheels, E. E, placed loosely on the shaft of drum, C, and provided with pawls, F, to engage with the ratchets, D, the above parts being used in connection with the pinions, I. I, on the shafts, J, J, which actuate the weight or pounder-rods, L, substantially as and for the purpose set forth.

56,027.—DESULPHURIZING GOLD AND SILVER ORES.—Anthony L. Fleury, Pittsburg, Pa.:

I claim, 1st. To treat sulphurets containing gold or silver in the way and for the purpose specified.

2d. The compound obtained, denominated as metalliferous coke, when prepared as above specified.

56,047.—QUARTZ STAMP-MILL.—Alexander Herdlein, Egan Canon, Nevada:

I claim, 1st. The double-armed levers, F, in combination with the stampers, E, and cranks or other equivalent devices on the driving-shaft, C, constructed and operating substantially as and for the purpose described.

2d. The hinge tappets, I, in combination with the adjustable heads, G, levers, F, and stampers, E, constructed and operating substantially as and for the purpose set forth.

56,089.—SHEET-METAL WATER-WHEEL.—Rees Palmer, West Chester, Pa.:

I claim, in combination with the sheet-metal band, A, supported by the arms, D, as described, the sheet-metal buckets, B, when the said buckets are constructed and applied to the said band, in the manner and for the purpose described.

56,101.—PUMP.—J. M. Roebuck and W. R. Reece, Donaldson, Pa.:

We claim in a pump the removable case, C, divided by partitions substantially as described, and furnished with valves and openings, as set forth, for the purpose of being readily repaired or renewed without disturbing the rest of the machinery, as set forth.

56,108.—QUARTZ-CRUSHER.—Thomas Shaw, Philadelphia, Pa.:

I claim the employment of metal balls secured by chains to a revolving wheel, the whole constructed and operating for the purpose described.

56,121.—PROCESS FOR REFINING OIL.—E. G. Sutherland, San Francisco, Cal.:

I claim the within described process for extracting and refining oil from whales and other marine animals and fishes, all substantially as described and for the purposes set forth.

56,129.—RECIPROCATING PUMP.—D. M. Weston, Boston, Mass.:

I claim the cushions or springs, C. C, made of rubber or other elastic material, or their equivalents, so placed as to form part of the connection between the piston of a pump and the driving-gear, substantially as above described and for the purpose of relieving the pump and machinery from jar or concussion.

56,150.—QUARTZ-CRUSHER.—S. B. Pike, assignor to himself and Robert H. Vance, San Francisco, Cal.:

I claim, 1st, The use of the guides, I. I., when arranged as described, to insure the passage of all the ore under the rollers, substantially as herein specified and for the purpose set forth.

2d, The employment of the horizontal bar, H, hub, I, and slotted boxes, K, K, or their equivalents, for the purpose of allowing the rollers, F, F, to accommodate themselves to the varying amount of ore on the revolving plate, B, and die, C, substantially as described and for the purposes as set forth.

3d. The gutter, D, operated by the binders, Y, Y, and keys, X, X, in combination with the revolving plate, B, B, rollers, F, F, guides, L, L, annular die, C, and scrapers, when constructed to operate in the manner specified and for the purposes set forth.

Special Scientific Brevities.

☞ Of the practical tendency of modern science a striking illustration is seen in Prof. Liebig's resignation of his important office in Munich. He goes to London to take charge of its immense system of drainage, and make it tributary to agricultural wealth. He proposes to gather all the contents of sewers and cesspools into vast receptacles, and disinfect them by chemical agencies for the use of farmers in the vicinity of the city.

☞ Mr. J. G. Taylor recently read a paper before the Royal Geographical Society of England, on his discoveries. Among other things, he mentioned that he had deciphered two inscriptions, found near the source of the Tigris, recording royal conquests of which mention had been found in the records at Nineveh. He considers the fact a strong confirmation of the accuracy attained in interpreting the hieroglyphics.

☞ In Canada are vast deposits of asphaltum, or mineral pitch, which the inhabitants call gum beds. A cubic foot of this asphaltum represents the effusion of not less than sixty to eighty cubic feet of lubricating oil, and from one hundred to one hundred and twenty feet of illuminating oil. Some of the best wells in Canada are sunk on or near these gum beds.

☞ M. Saussure's theory that cretinism did not exist in places 1,000 metres (or 3,280 English feet) above the level of the sea, was disproved by the Sardinian Commission, who found numerous cases in localities elevated 1,000 metres (or 5,248 feet above the sea. In one village of this elevation ninety cases of cretinism were found in every 1,000 of the population.

☞ A method has been discovered in Belgium to obtain a photographic groundwork for oil paintings. Fine canvas or silk, such as is employed for small and delicate works, is used. The process is simply to cover the surface with a preparation of collodion and chloride of silver, and expose and prepare it in the ordinary manner, just as in the case of paper.

☞ Water, in passing from the solid to the liquid state, converts 140 degrees of sensible into latent heat; in passing from the liquid to the aeriform condition, it absorbs 1,000 degrees of heat, rendering it latent. Alcohol, in evaporating, absorbs 374 degrees of heat; ether, 163 degrees; and spirit of turpentine, 138 degrees.

☞ Everyone has seen meteors shoot blazing across the sky at night. An astronomer now reports the passage of an unburned meteor, which he supposes was outside the limit of the earth's atmosphere. It was a dark body moving with immense rapidity, and visible only by coming between himself and the moon.

☞ Crude petroleum is being extensively used in Western New York for the destruction of insects on trees. It was found that the acids of refined petroleum were injurious to the trees themselves, but crude is harmless and has the desired effect in permanently destroying the vermin.

☞ Among the great tunnels of the world is that which connects Camagli with St. Marguerite, on the road between Genoa and Chivari. It is 3,500 yards in length, and is just completed.

☞ It is estimated by Mr. H. E. Moring, of New York, the best recognised authority on the subject, that the whole non-producing world consumes about 300,000 tons of coffee.

☞ For silvering copper and brass surfaces, M. Bonder recommends a powder composed of 12 parts cyanide of potassium, 6 parts nitrate of silver, and 20 parts prepared chalk.

☞ Dr. Thompson, of London, succeeded in subdividing sulphide of lead, so that each atom containing the 1-2,015,000,000,000 of sulphur was visible to the assisted eye.

☞ The lands along Oil Creek are estimated at a *bona fide* cash value of two hundred and fifty millions of dollars.

☞ The greatest evaporative power of petroleum is about one and one-half times that of carbon.

☞ Four millions tons of bituminous coal were made into gas in the United States last year.

☞ One grain of copper has been obtained from four hundred grains of wheat ash.

☞ It is reported that oil wells in Tehuantepec are yielding enormously.

All Sorts.

☞ A remarkable tree was brought to New York in the month of January, 1866, from a Western State. It was black walnut, seventy feet long, measuring 4,500 feet board measure, but when cut into veneers, it would be thirty times that, making 135,000 feet, which, at twenty-five cents, would be worth $27,000. The cost of cutting and placing it in store for sale would be about $700. Black walnut, for the last six years, has been

NEW YORK STOCK MARKET.

MINING.	July 7 BID.	July 7 ASKED.	July 9. BID.	July 9. ASKED.	July 10. BID.	July 10. ASKED.	July 11. BID.	July 11. ASKED.	July 12. BID.	July 12. ASKED.	July 13. BID	July 13. ASKED.
Ada Elmore		3 20				3 15						3 10
Altona	2 50											
American Flag	2 00	2 25			1 00	2 00	1 00	2 50	1 30		1 50	2 50
Atlantic & Pacific	1 80	2 50				2 50	2 00		2 00	2 50	2 25	2 50
Bates & Baxter Gold	1 50	2 00			1 50	2 00		2 00	1 00			3 00
Benton Gold	1 70	1 80			1 70	1 85	1 70	1 75	1 70	1 75	1 65	1 75
Bobtail Gold		3 00				3 00		3 00				3 00
Bullion Consol. Min'g. Co												
Consolidated Gregory	20 00	20 40			19 00	19 50	19 00	20 25	19 50	20 00	19 25	19 50
Corydon					2 00	2 05	1 50	2 25	2 00	2 05	2 00	2 10
Downieville Gold	55	60			61	65	64	65	65	67	65	67
Eagle Gold								2 50		2 00		2 00
Gold Hill												
Gunnell Gold	1 15	1 16			1 13	1 16	1 10	1 13	1 12	1 13	1 10	1 12
Gunnell Central		5 00										
Holman	33	38				34	32	38	32	35	31	40
Hope Gold	2 80	3 25			2 75	3 50	2 75	3 25	2 50	2 90	2 50	3 00
Kipp & Bueli Gold	1 40	1 55			1 50	1 95	1 60	1 75	1 55	1 90	1 40	1 80
Liberty Gold		18			10	20		25				25
Liebig Gold												
Manhattan Gold												
Keystone Silver					29	25	20	25	20	40	10	25
New York	60				80	85	1 60	1 10	1 14	1 15	1 20	1 24
Oak Hill Gold					1 25	1 50	1 25	1 50	1 50	2 00	1 50	
Quartz Hill	4 00	4 75			4 90	5 00	4 35	4 90	4 15	4 25	3 95	4 10
Rocky Mountain Gold					3 00	3 40	3 00	3 40		3 50		3 50
Silver Eagle												
Smith & Farmelee Gold	9 15	9 35			9 50	9 90	9 55	9 65	9 25	9 55	9 25	9 50
Texas Gold						50		25				
Virginia City						50				50		
Waddingham Gold								8 00				
Union Gold		3 50			2 00	3 00		3 00				2 50
West Fellows Gold		2 00				2 00						
Cuicotonia Copper		4 00										
Hancock Copper	22 00	24 00			22 25		22 00		22 00			
Canada Copper												1 00
Evergreen Bluff Copper												
French Creek Copper								1 25		1 25		1 25
Hilton Copper										1 50		
Central Copper												
Sheldon & Columbian Cop												
Knowlton Copper					4 00							
Mendota Copper		3 50								3 50		3 50
Minnesota Copper												
Norwich Copper								1 50				
Ogima Copper												
Deubo Lead										20		
Phœnix Lead & Mining Co												
Redwood Lead												
Wallkill Lead	75	95			85	95	90	75	70	95	70	1 00
Columbian Coal												
Schuylkill Coal												
Lake Superior												
Copake Iron						1 00		1 00		1 00		1 00
Foster Iron												
Annular Drill												
Eagle Gold								2 50		2 00		2 00
Rockland												
Isle Royal						12 00				12 00	8 00	12 00
British American Coal												
Rutland Marble					10 00	20 00	14 00	18 00	14 00	20 00	14 00	19 00

OIL STOCKS.

Bennehoff Run	11 00	11 40			10 15	10 50	9 35	9 50	9 50	9 75	9 30	9 70
Buchanan Farm	30	31			28	31	27	34	27	32	28	30
Central	2 30	2 60			2 45	2 55	2 30	2 55	2 40	2 55	2 40	2 50
Excelsior		48			40	49	50	50	30	50		49
First National		9			5	10	5	8	5	8	6	7
Ivanhoe	4 00	4 40			2 25		2 25		2 25			
N. Y. & Alleghany		2 30			4 50		4 50	5 00	4 30	4 60	4 40	4 60
Northern Light		2 00								2 75		2 00
Oil Creek of N. Y.		50				50	32	60	30	50	30	50
Pit Hole Creek	2 40	2 65			2 40	2 60	2 30	2 60	2 25	2 45	2 30	2 40
Rynd Farms	22				22	28	25	30	25	30	23	30
Shade River	35	45			30	50	31	42	30	45	38	40
United States	8 05	8 20			8 40	8 75	8 60	8 90	8 65	8 75	8 40	8 60
Palmer Petroleum												
Union												
Empire and Fit Hole												
Venango & Fit Hole												
Allen Wright												
Bergen Oil & Coal												
Bennehoff & Fit Hole												
Equitable												
Fee Simple												
Forest Co. Petroleum Co.												
Gt. Western Consolidated												
Guild Farm												
Heydrick Bros												
Homowack												
Lilly Run												
Oak Shade Petroleum												
Penn. Oil Creek												
President												
Southard												
Sherman & Barnsdale												
Sherman Oil												

FREE LIST.

Bennehoff Run Oil	3 80				3 80	4 00	4 00	4 25	3 80	4 10	4 10	4 50
Brevoort	1 30	2 00			1 50				1 30	1 45	1 00	1 25
Bliven									50			1 00
Brooklyn	20	55				1 00		60		60		50
Bradley	5	10							5	15	5	10
Cherry Run Petroleum Co									5			
Cherry Run Special			30		30	40		40		40		35
Clinton Oil	1 10				1 10			1 10	1 10	2 00	1 25	2 00
Consolidated (New York)									75			
Empire City Pet'm Co	10	30			10	20		20		30		30
Eclectic Oil										2 00		
Enniskillen								2 00		2 00		2 00
Germania	8				8		8	10	6		7	20
Hamilton McClintock		2 50				2 50				1 25		2 50
Heydrick	19	25			19		20	25	15		20	25
High Gate		15				15		15		15		15
Liberty		20										25
Mt. Vernon		25					5	20	5			25
Manhattan	19	21				23	20	21	20	21		25
National												
New York & Newark	7	10				10				10		7
New York, Phil. & Balt	5	15				20		19	5		8	15
Second National		50				50		50	15	40		
Oceanic	8				7	10	7	10	7	10	7	10
Pepper Well												
Pit Hole Farms		1 10				1 00				90		75
Pet. Consolidation												
Rock Petroleum Co., N.Y.								10				
Union	3 50				3 00		3 00		2 50			
United Petroleum Farms	20				20	25	22	28	22	30	25	25
West Va. Oil & Coal Co											3	
Webster	15	25			18	30	16		20	28	0	

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

COAL.

Companies.	July 6. BID.	July 6. ASKED.	July 7. BID.	July 7. ASKED.	July 9. BID.	July 9. ASKED.	July 10. BID.	July 10. ASKED.	July 11. BID.	July 11. ASKED.	July 12. BID.	July 12. ASKED.
Belmont	2 75	3 50	2 75	3 50	2 75	3 50	2 75	3 50	2 75	3 50	2 75	3 50
Collins		80 00		80 00		80 00		80 00		80 00		80 00
Cape Breton	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75
Eagle Hill Mutual	50	1 00	50	1 00	50	1 00	50	1 00	50	1 00	50	1 00
Franklin		3 00		3 00		3 00		3 00		3 00		3 00
Gilberton	30 00	35 00	30 00	35 00	30 00	35 00	30 00	35 00	28 00	35 00	28 00	35 00
Glenville	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50
Harleigh	45 00	55 00	45 00	55 00	45 00	55 00	45 00	55 00	45 00	55 00	45 00	55 00
Lackawana	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00
Lorberry												
Locust Dale	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00
Mammoth Vein	11 00	12 50	11 00	12 50	11 00	12 50	11 00	12 50	11 00	12 50	11 00	12 50
Mount Pleasant	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00
New England	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00
Short Mountain	22 50	23 50	22 50	23 50	22 50	24 00	22 50	25 00	22 50	23 00	22 00	22 50
Summit Branch	13 00	14 00	13 00	14 00	13 00	14 00	13 00	14 00	13 00	14 00	13 00	14 00

MINING.

Albany and Boston											10 00	
Bay State	8 50	9 00	8 00	8 87	8 75	9 00	12 25	12 50	12 75	12 87	12 50	13 00
Boston		1 00		1 00		1 00		1 00		75		50 1 00
Canada	50	90	50	90		90		90		90		90
Concord	3 00		3 12		3 12	4 00	3 25		3 25		3 12	3 75
Copper Falls	40 00		41 00	58 00	40 50	40 00	40 50			40 00	41 00	
Franklin			39 50			40 00	40 00		40 00	41 00	41 00	
Hancock	21 00	22 00	21 75	22 00	22 50	22 00	22 12		22 25		22 12	22 50
Humboldt	3 00	4 00		4 00	3 50	4 00	3 50		4 25	5 00	4 12	4 25
Huron	38 00	40 00	38 00		38 00	37 50	38 00	39 00	38 00	40 00	39 00	39 50
Isle Royal	6 00		7 00	11 00	8 00	11 00		11 00		11 00	8 00	11 00
Mesnard			1 00		75		1 00		1 00		2 00	
Minnesota assst. pd.	7 00	9 75		9 00		8 75		8 50		8 87		8 00
National	13 00			20 00	12 00		12 00	18 00	12 00	18 00		18 00
Pethevick		4 25	3 75	4 12		4 50		4 50	4 56		4 75	5 00
Pewabic	33 00	35 50	33 00	34 50		35 00	35 50	34 00	34 00	36 00		
Phœnix		8 00			4 00	8 00	4 00	8 00				
Pittsburg	46 00	50 00	46 00	50 00	46 00	50 00	46 75	50 00	47 00		47 00	50 00
Pontiac	75	1 50	75	1 50	1 00	1 50		1 00	1 50	75	1 50	
Quincy	45 00		44 00	46 00	45 00	46 00	45 00		45 25	46 00	45 00	45 50
Rockland	6 00	6 25	6 00	6 25	6 00	6 25	6 00	6 25	6 00	6 25		6 00
South Side	1 00	1 75			1 25			1 75		2 00	1 50	1 75
Star assst. pd.	1 00	1 50	1 00	1 50					1 25	2 00	1 00	
Superior	3 00	3 62		4 00		4 00		3 50	2 50	3 50	2 50	4 00
Toltec		12 00			2 00	3 00	2 00		1 75			
Winthrop		50								2 00		
Consolidated Gregory	20 60	21 50	19 90	20 00	19 77	20 00	19 60	20 00	19 90	20 50	19 50	20 00
Quartz Hill Gold	3 60	3 75	4 00	4 10	4 00	4 10	4 90	5 00	4 35	4 75	4 30	4 50
Smith & Farmelee Gold	9 20	9 30	9 15	9 20	9 15	9 20	9 50	10 00	9 55	9 65	9 25	9 50

PETROLEUM

Beebe Farm	5 00	7 50	5 00	7 50	5 00	7 50	5 00	7 50	5 00	7 50	5 00	7 50
Boston and Kentucky		25		25		25		25		25		25
Boston Oil Creek Land Co.	15	50	15	50	15	50	15	50	15	50	15	50
Boston Petroleum Oil Co.	50		50		50		50		50		50	
Botolph Oil Well Co	75	1 50	75	1 50	75	1 50	75	1 50	75	1 50	75	1 50
Crescent Petroleum Co		1 00		1 00		1 00		1 00		1 00		1 00
Everett Oil Co	5	15	5	15	5	15	5	15	5	15	5	15
" (Pref. Stock)		1 00		1 00		1 00		1 50		1 50		1 50
Farrar	4 00	6 50	4 00	6 50	4 00	6 50	4 00	6 50	4 00	6 50	4 00	6 50
Fuller Farm	18	22	18	22	18	22	18	22	20	25	20	25
Great Basin	3	20	3	20	3	20	3	20	3	20	3	20
Indian Spring	15	30	15	30	15	30	15	30	15	30	15	30
Mass. and Oil Creek	50	60	55	70	60	70	65	75	75	85	70	85
New England	6	10	4	8	4	8	10	18	10	12	8	10
New York and Boston		30		30		30		30		30		30
Pepper Petroleum	1 50	2 00	1 50	2 00	1 50	2 25	2 00		2 00		2 00	
Pittsburgh and Boston	2	15	2	15	2	15	2	15	2	15	2	12
Tremont	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50
Suffolk and Oil Creek		30		15		15		15		15		12
Winthrop	2	15	2	15	2	15	2	15	2	15	2	15
Independ. of U.S. & C.W.												

New York Companies.

Bennehoff Run	11 15	11 25	11 00	11 05	10 25	10 50	10 25	10 50	9 35	9 45	9 50	9 60
Bergen Oil and Coal												
Bradley												
Buchanan Farm	28	32	28	32	30	32	27	35	27	30	27	34
Central	2 35	2 50	2 30	2 35	2 50	2 05	2 45	2 55	2 35	2 50	2 40	2 50
Cherry Run Special					20	30	25	35	25	35	25	40
Consolidated												
Empire City	15	40	15	40	10	30	10	40		40		40
Empire and Fit Hole												
Excelsior	45	50		50		50	40	48	30	38	30	38
Northern Light		2 00		2 00		2 00		2 00		2 00		2 00
Oceanic												
Oil Creek	37	45	35	45	35	45	35	45	35	45	35	45
Palmer Petroleum												
President												
Pit Hole Creek	2 50	2 60	2 40	2 50	2 45	2 55	2 40	2 50	2 40	2 50	2 35	2 50
Rynd Farm	22	30	22	30	22	30	22	35	22	35	25	30
Union												
Webster												
Stewart's Run		25			25		25		25	25	30	25 30
United States	8 00	8 25	8 05	8 10	8 00	8 10	8 40	8 50	8 60	8 70	8 55	8 70

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@	40 00
Cupelling "	35 00@	40 00
Scales	10 00@	30 00
Assay Balances and Weights	100 00@	200 00
Plumbago Crucibles	25@	1 50
Paris "	15@	1 25
Porcelain Evaporating Dishes	25@	5 00
Fire Tongs	75@	3 50
Hammers	1 00@	2 50
Funnels	15@	1 00
Litmus Paper, quire	1 00@	1 25
Ingot Moulds	1 25@	3 00
Flasks, Bohemian Glass	15@	1 00
Sand Baths, Iron	25@	1 00
Pivers	50@	2 00
Mortar and Pestle, Iron, Agath, etc	50@	20 00
Lamps, Gas and Alcohol	75@	5 00
Blowpipes	50@	3 00
Hydro-Oxygen Blowpipes	25 00@	125 00
Pincers, or Cutting Pivers	75@	1 50
Glass Tubes, German, etc., per lb	75@	1 50
Muffler	50@	1 50
Anvils	1 00@	2 00
Cupel Moulds	3 50@	5 00
Cupels, per doz	50@	3 50
Bone Ash, per lb	25@	50
Test Lead, "	50@	75

* These articles can be procured at the stated rates, by sending order, with remittance, to

WESTERN & COMPANY, 37 Park Row.

CHEMICALLY PURE PREPARATIONS USED IN THE VOLUMETRIC ASSAY.

Acid, Acetic	$0 75 lb
" Arsenious	0 05 oz
" Hydrochloric	0 50 oz
" Nitric	0 60 lb
" Oxalic	0 20 oz
" Sulphuric	0 75 lb
Ammonia	0 60 lb
Baryta, Carbonate	0 20 oz
" Hydrate	0 40 oz
" Nitrate	0 12 oz
Barium, Chloride	0 12 oz
Copper, Sulphate	0 10 oz
Iodine	0 75 oz
Iron, Sesquichloride, Cryst	0 25 oz
Lead, Nitrate	0 10 oz
Mercury, Peroxide	0 20 oz
" Protonitrate	0 25 oz
" Chloride	0 20 oz
Potassa, Carbonate	0 25 oz
" Bichromate	0 15 oz
" Bichromate, Fused	0 20 oz
" Chromate	0 15 oz
" Hydrate	0 40 oz
" Ferrocyanide	0 25 oz
" Permanganate	0 18 oz
" Sulphate	0 10 oz
Silver, Nitrate	Gold 1 10 oz
Soda, Acetate	0 10 oz
" Carbonate	0 10 oz
" Hydrate	0 20 oz
" Phosphate	0 10 oz
Sodium, Chloride	0 10 oz

UNITED STATES SECURITIES.

Reported for the Journal of Mining by Messrs. MEIGS, VON SEYBOLD & CO., No. 4 Broad st., New York.

Friday Evening.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	PRIN. PAY.	INTEREST.	WHEN PAYABLE.		OFF. PER CENT.	ASKED PER CENT
Registered Bonds	28 January, 1847	$9.415.250	6	1867		Jan.	July	129	130
Coupon "									
Registered Bonds	31 March, 1848	8.908.342	6	1868		Jan.	July	123	124
Coupon "								124¾	125
Registered Bonds	22 June, 1850	7.022,000	5	1871		Jan.	July		
Coupon "									
Registered Bonds	14 June, 1858	20.000 000	5	1874		Jan.	July		100
Coupon "								98½	
Bonds. March 3. 1865			6	1881					
Oregon War Debt		1.016 000	6	1881		Jan.	July		
Registered Bonds	3 Feb. & 17 July & Aug., 1861	282.295.500	6	1881		Jan.	July	109	109¼
Coupon "									
Registered "	25 February, 1862 (5-20's)	514.780,500	6	1882		May	Nov.	105	105¼
Coupon "									
Registered "	(5-20's) new issue	100.000,000	6	1884		May	Nov.	105	
Coupon "									
Bonds. March 3. 1865	(5-20s)	80,734,500		1885					
Registered "	(10-40's)	171.219,100	5	1904		Mar.	Sept.	98½	99
Coupon "									98½
Total April 1									

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.		OFF.	ASKED.
AUTHORIZING ACTS.								
Bonds. Cent'l P. R. R. Co., July 2. 1864	6	$2 362 000 00	1895		Jan.	July		
Bonds, Union P. R. R. Co., July 2. 1864	6	2.130.000 00	1895					
Temporary Loan	4		10 days' notice					
Temporary Loan	5	124.561.486 00	10 days' notice					
Temporary Loan	3		10 days' notice					
Certificates of Indebtedness. March 1. 1862	6	45.027.000 00	1 yr from date		1 yr fr. date			
1 and 2 Years' Notes. March 3. 1863	5				1 yr fr. date			
3 Years' Compound Interest Notes	March 3, 1863	162.012 140 00	3 yrs from date		At maturity			
	June 20, 1864							
3 Years' Treasury Notes	June 30, 1864		3 yrs from date		Aug.	Feb.	103¾	103⅞
	March 3, 1865							
3 Years' Treasury Notes. March 3. 1865	7.3	$12.221.600 00	3 yrs from date		June	Dec	103¼	104
3 Years' Treasury Notes. March 3. 1865	7.3		3 yrs from date		July	Jan	103⅝	104
Aggregate of Debt Bearing Lawful Money Interest. April 1				Total Interest				

gradually taking the lead of mahogany, and is worth as much now as mahogany was formerly.

☞ Lovers of strong tobacco for smoking may enjoy their fancy without cobbling too much nicotine by putting a little wad of cotton soaked in tannin or citric acid in the pipe-stem. The smoke in traversing this, leaves so much of its nicotine that only two parts in seven pass through to the mouth.

☞ A new texile plant has been discovered in Mexico. Its fibres are extremely long, having the appearance of those of hemp, but are much finer. By chemical means it may be reduced to perfect whiteness, and the waste may be worked into a pulp for paper.

☞ The proprietors of the Fort Pitt cannon foundry, Pittsburg, intend sending a big twenty-inch cannon from that city to the Paris exhibition. It will be twenty-two feet long, five and a-half feet diameter at the breech, and will weigh fifty tons.

☞ Among other curious collections to be sent to Paris will be one from the Viceroy of Egypt, comprising the entire museum of Boulak, composed of antiquities, arms and jewels, dating from the earliest history of Egypt.

☞ In the Bay of Zante, a sailor who was killed by lightning while sleeping on the side of a ship, had impressed on his left breast the number 44, which hung engraved on metal close to the place.

☞ A Jewish house, entire, has been excavated in Syria, dating two centuries before Christ. It is furnished after the Egyptian fashion, and parts of the Old Testament were found in some of its rooms.

☞ Crude petroleum is utterly unfit for an unguent, and no preparation from it has yet been made that did not contain substances and elements very injurious to the hair.

☞ A German firm of locomotive builders, who recently completed their thousandth engine, gave a dinner and a dollar to every workman to celebrate the event.

☞ An exchnage, describing a celebration, says: The procession was very fine and nearly two miles long in length as was the prayer of Dr. Perry the chaplain.

☞ In the report of a certain school committee the following statement occurs: We have a school-house large enough to accommodate 400 pupils four stories high.

☞ It is thought that a steamship eighty-five feet on deck by sixteen feet, and eighteen horse power, could ascend the River Euphrates nine hundred miles.

☞ At a late fire in London the steam fire-engine did as much work at a cost of about $60 as would have cost $7,000 by the old system of manual labor.

☞ Said an old toper to his comrade the other day: "If one swallow made a summer, what a tropical region would your stomach be, old fellow!"

☞ He that cannot forgive others breaks the bridge over which he must pass himself, for every man has need to be forgiven.

☞ A brilliant genius is writing for the Kosiusko *Star* a novelette entitled "The Georgia Gal; or, Who Stole My Goobers?"

☞ The sugar lands which lie along the banks of the navigable streams in Louisiana are now chiefly devoted to cotton.

☞ Northern capital is pouring into East Tennessee, and especially into Knoxville and Chattanooga.

☞ The manufacture of printing paper from poplar wood is carried on extensively in Maine.

☞ The Falls of Niagara pass 100,200,000 tons of water over their brink every hour.

☞ France has 11,500 miles of navigable streams.

MINING COMPANY STATEMENTS.

CHURCH UNION GOLD COMPANY; CAPITAL STOCK $1,200,000; PAR VALUE OF EACH SHARE $5; OFFICE 68 BROADWAY AND 19 NEW STREET, NEW YORK.

The property of this company is in El Dorado county. The Directors say that "it was selected by Mr. Church, under the direction of Professor Silliman, as the best available mine in California; is conveniently situated; has an inexhaustible supply of ore; is already opened and has machinery on the ground taking out gold; is more than paying its expenses, and bids fair before long to pay a dividend on its stock. It is managed by an experienced and honest mining engineer; the stock is not assessable; there is no personal liability; the property is purchased and paid for, and is free from any lien or encumbrance; and there is no stock for sale except that appropriated for the working capital."

REPORTS.

AMYGDALOID MINING COMPANY OF LAKE SUPERIOR: GENERAL OFFICE 324 WALNUT STREET, PHILADELPHIA.

The annual report of this copper company has reached us. The Directors say: The whole amount shipped in the year was, of mineral copper, 584,092 lbs., yielding 418,964 lbs of ingot copper. The whole amount received was sold at prices varying from 28 cents to 42 cents, an average of 32 86-100 cents for the total sum of $137,683 08-100. During the year there have been sunk of shafts, 244 6-12 feet; of winzes, 655 feet; drifted, 1,200 11-24 feet, and stoped 1,257 2-36 fathoms; all of which, in detail, will be found in the accompanying reports documents and tables from the agent, mining captain, clerk and treasurer. These fully explain the condition and working of the mine and company; and from them it would appear that we possess a property that in ordinary and settled times, should remunerate for working and ultimately pay satisfactory dividends. Up to the present time the cost of labor has not declined proportionately to the price of copper; and the former must come down, or the latter advance before mining can be in a healthy condition.

DIVIDENDS.

Yellow Jacket Silver Mining Company, $50 in gold per foot, payable on the 15th inst. by Eugene Kelly & Co. Consolidated Petroleum Oil Company 2 per cent. on reduced capital, payable on the 16th inst. at 19 Broad street. Central Petroleum 1 per cent., payable on the 20th inst. at No. 8 Pine street. The McIlheny and the Volcanic Oil and Coal 2 per cent., and the Petroleum Mining 25 per cent. payable at Philadelphia. Hale & Norcross (Silver) has also declared a dividend of $75, and Imperial (Silver) $6 per share, payable at Eugene Kelly & Co.'s.

MEETINGS.

Annual meetings will be held at their offices in this city, by the Mercer and Silver Hill Mining Companies on the 19th inst. at noon. A special meeting of Kanaka Gold Mining Company, on the 16th inst.

Coal Resources of the World.

In a speech recently made in the House of Commons, Mr. H. Vivian said: The export of coal in 1854, from Great Britain, was 4.309,000 tons. In 1864 it had increased to 8,809,908 tons but that during the past three years the increase had been only 868,625, or 3½ per cent. per annum. America possessed 196,000 square miles of coal field, nearly forty-two times as large as our own. America must play a very prominent part in the production of all the manufactures dependent upon coal. It was a mere question of labor. When labor was sufficiently abundant the American coal-field would be developed, but England would still hold her own as far as Europe and a large portion of the world was concerned. There was a very large coal-field in France. Belgium was already competing with us. The coal-fields of Belgium and France were estimated at 12,000 square miles. The coal-fields of Rhenish Prussia were put down at 2,000 square miles. The Prussian Government were conducting surveys and boring, and immense tracts were being discovered. The Westphalian coal-field extended over 9,680 square miles. The Russian coal-fields of the Dnieper and Don were estimated, by Sir Roderick Murchison, at 11,000 square miles—two and a half times as large as the discovered coal-fields of this country. In Silesia he had himself seen a seam of coal fifty feet thick, and there was a large area of coal-field. Spain had a large coal-field in the Asturias. In Austria, India, Japan, China, New Zealand, Australia, Brazil, Chili, and Melville Island coal was to be found. They could hardly go anywhere without finding a store of coal. Providence had not stored up these precious hoards for no purpose, and although the coal resources of these countries had not yet been developed, yet, depend upon it, they would be, and the trade of those countries would be proportionately increased. With respect to the greater or less waste incident to different modes of working, he said: "Some systems of working were far more economical than others. Mr. Besset, agent for Lord Tredger, and who has fifty collieries under his charge, in a paper read before the Institution of Engineers, in South Wales, gave six instances, and the following was the result with regard to five of them: 27 acres, No. 1 Longwell. Somerset, 6.40 per cent. loss; 12 acres, No. 2, ditto, 2.14 per cent. loss; 36 acres, No. 4, 30.43 per cent, loss; 88 acres. No. 5, ditto, 34.09 per cent. loss; 94 acres, No. 6, ditto, 39.84 per cent. loss. Undoubtedly there were various differences in the instances referred to, and he did not believe that such losses as those usually occurred."

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the London Mining Journal, May 26.

MINING LITERATURE.—Amongst the recent additions to mining literature in the New World, the AMERICAN JOURNAL OF MINING is worthy of especial mention; it is to mining and the allied sciences, so extensively carried on in the United States, what the *Scientific American* is to the mechanical sciences generally. The paper and printing are far superior to the ordinary newspapers of the States, and both skill and judgment are displayed in the editorial department. Six numbers have already appeared and the same amount of care is a guarant in all.

From the New Yorker Handels-Zeitung.

[TRANSLATED]

The first number of the *American Journal of Mining*, edited by Mr. George F. Dawson, is before us and we welcome it. We think the *Journal* has made its appearance just in the right time.

From the Rocky Mountain (Denver) News, June 13.

THE AMERICAN JOURNAL OF MINING.—We receive this valuable paper regularly from its office of publication, 37 Park Row, New York, and find it one of our most prized mining exchanges. It is weekly filled with valuable and interesting matter to miners and mill-men, and should receive a large subscription list from Colorado.

From the Mining and Scientific Press, San Francisco, Cal., May 5th, 1866.

THE "AMERICAN JOURNAL OF MINING."—This is the title of a new weekly journal of sixteen pages, published in New York, the first two copies of which we have just received. Its salutatory address is brief and modest, making no special promises, except that politics, being entirely incompatible with the spirit and scope of such a paper, will be utterly ignored. The typographical execution of the paper is remarkably neat, and its mining summary very complete. The subject of petroleum very properly receives a large share of its attention; and oil companies, as well as gold and silver mining companies, are tabulated in a very convenient form.

From the American Artisan, May 23.

We have received the first seven numbers of the first volume of the AMERICAN JOURNAL OF MINING, a weekly periodical edited by G. F. Dawson, published by Western & Co., 37 Park Row, New York, and filled with very interesting matter—original and selected—relative to mining, oil-boring, and the allied arts. Subscription $4 a year in advance.

From the Journal of Applied Chemistry, May 1866.

AMERICAN JOURNAL OF MINING.—Published by Western & Co. Edited by Geo. F. Dawson, 37 Park Row, N. Y. Weekly—$4 per annum. We have received the first five numbers of this publication. Such a paper, edited as ably as the specimens we have, is needed by those interested in mining. Its leading articles are excellent. We wish it the success it deserves.

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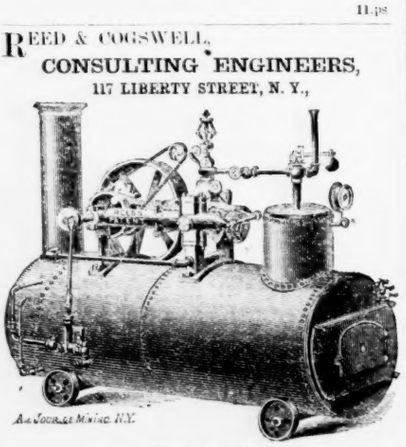

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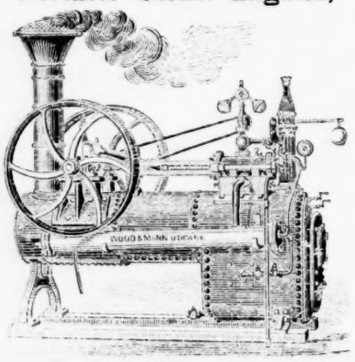

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This is undoubtedly one of the best Mines in the famous Ducktown Copper Region, and has been successfully worked. There are on the Premises Smelters, with superior water-power, Ore and Coal sheds, &c., in complete working order—besides all the necessary buildings, such as Offices, Stores, Residences, &c., necessary for immediate operation. There are extensive shafts sunk upon the property, and vast beds of rich Copper Ore have been disclosed. This property will be leased for the period of

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The Machines now offered for sale are:

No. 1 Hand machine for ONE man, weighing 100 lbs., with 3 drills, complete.....$ 200 00
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No. 5. Machine for VERTICAL drilling, *without engine*, to drill holes 4 to 6 inches diameter, with timber frame on wheels, &c.....$1,000 00
No. 6, Machine (entirely of iron), drilling at any angle holes 4 to 8 inches diameter, with *nominal* 4 horse power engine (on truck and moved by own engine), $2,500 to 3,000 00

These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily, drilling into a block of Rockport (Mass.) Granite, the hardest Granite known, at the Machine Shop of STERLING & KERR, No. 344 and 346 West 24th street, West of 10th avenue.

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DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

Certificate.

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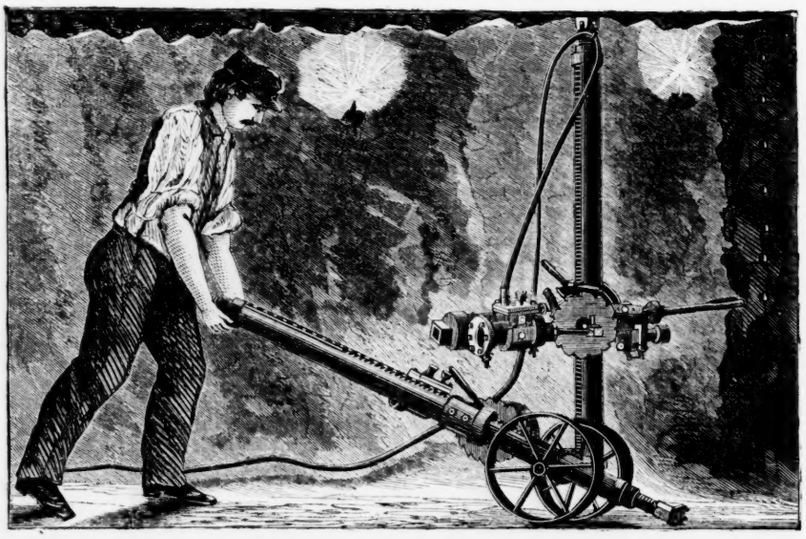
The advantages resulting from such a reduction of the time can hardly be over estimated.
Very respectfully,
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street,
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We used it for several months on the regular work, and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.
S. M. ALLEN,
Late President of Niagara Falls Water Power Company

This cut represents a section of a mining tunnel, or *drift*, 6x4½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours.

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel-drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feed, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on micaslate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.
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THE HARRISON BOILER.

This New Steam Generator combines essential advantages IN ABSOLUTE SAFETY FROM EXPLOSION, in first cost and cost of repairs, durability, economy of fuel, facility of cleaning and transportation, not possessed by any other boiler.

It is formed of a combination of cast iron hollow spheres—each eight inches in external diameter, and three-eighths of an inch thick, connected by curved necks. These spheres are held together by wrought iron bolts with caps at the ends. The form is the strongest known; its strength to resist internal pressure very great—unweakened as it is by punching or riveting, which lessens the strength of the wrought iron boiler plate about forty per cent. Every boiler is tested by hydraulic pressure at 300 pounds to the square inch.

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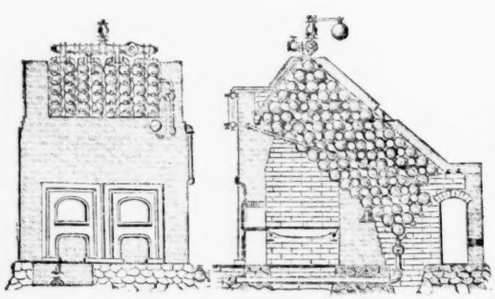

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A boiler can be increased to any extent by simply adding to its width, and being the multiplication of a single form, its strength remains the same for all sizes. It has less weight and takes less than one-half the ground area of the ordinary cylinder boiler.

ANY KIND OF FUEL MAY BE USED UNDER THIS BOILER, from the most expensive, to refuse coal dust.

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